# **Attachment O**

**Toxics Management Plan (TMP)** 

- TMP Justification Memorandum
- Acute/ Chronic Toxicity Endpoint Spreadsheets (55, 62 MGD)

#### MEMORANDUM

# DEPARTMENT OF ENVIRONMENTAL QUALITY Blue Ridge Regional Office

3019 Peters Creek Road

Roanoke, VA 24019

SUBJECT:

Toxics Management Plan Justification for Western Virginia Water Authority WPCP

VPDES Permit No. VA0025020

TO:

Permit File

FROM:

Becky L. France, Environmental Engineer Senior BA

DATE:

November 20, 2008

#### INTRODUCTION:

The Western Virginia Water Authority (WVWA) owns and operates the WVWA Water Pollution Control Plant, which serves the cities of Roanoke and Salem, the counties of Roanoke and Botetourt, and the Town of Vinton. Table 1 summarizes the facility information. The permit for this facility was reissued on May 14, 2004, and includes a Toxics Management Program (TMP) for outfall 001, which is also summarized in Table 1.

#### TOXICITY EVALUATION / DISCUSSION:

Tables 2 and 3 include a compilation of the acute and chronic toxicity testing data since May of 2004. Following completion of the upgrade to 55 MGD in March of 2008, the facility began quarterly toxicity testing using Ceriodaphnia dubia and Pimephales promelas. For outfall 001, the facility has completed 15 valid acute and 15 valid chronic toxicity testing events. The results of the acute tests indicated that the effluent was not acutely toxic to Ceriodahnia dubia or the fathead minnows. In the chronic tests, the survival or reproduction of the Ceriodaphnia dubia was not affected in any of the effluent test concentrations. Also, the effluent did not adversely affect the survival or growth of the fathead minnows.

Guidance Memorandum 00-2012 designates criteria to allow testing of only one species per test type rather than two species. The criteria designate one of two conditions that need to be met: (1) the average percent survival in 100% effluent for all the acceptable acute tests during a permit term with a particular species is  $\geq 100$ , or (2) the average percent survival in 100% effluent for all of the acceptable chronic tests during a permit term with a particular species is  $\geq 80\%$  and the secondary endpoint for reproduction or growth is an NOEC=100%. If the criteria indicate that there is no possibility for toxicity from tests with the evaluated species, annual testing with the other tested species should be sufficient.

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During the previous permit term, <u>Pimephales promelas</u> met the percent survival criteria in 100% effluent for the acute tests, and <u>Ceriodaphnia dubia</u> met the percent survival criteria in 100% effluent for the chronic tests. Therefore, the least sensitive species meeting the criteria for each test type are not deemed necessary.

Only one species (most sensitive) will be required for acute and chronic toxicity testing. The facility should continue annual compliance monitoring using <u>Ceriodaphnia dubia</u> for the acute toxicity tests and <u>Pimephales promelas</u> for the chronic toxicity tests. The toxicity testing NOEC endpoint calculations are included on the attached spreadsheet.

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Table 1.

# **FACILITY INFORMATION**

FACILITY: Western Virginia Water Authority WPCP

LOCATION: 1502 Brownlee Avenue, S.E., Roanoke, Virginia

**VPDES PERMIT NUMBER:** 

VA0025020

Current Expiration Date: 02/18/09

SIC CODE/DESCRIPTION:

4952/Wastewater Treatment Plant

OUTFALL/FLOWS (MGD):

Outfall 001 = 55 MGD; 62 MGD (Proposed)

#### RECEIVING STREAM/CRITICAL FLOWS/IWC:

Receiving Stream:

Roanoke River

7Q10 = 23 MGD

River Basin:

Roanoke River

1010 = 20 MGD

Subbasin:

Roanoke River

3005 = 35 MGD

Section: Class:

6 IV Harmonic mean = 97 MGD IWC = 71% (55 MGD Facility)

Special Standards:

6.5 - 9.5 S.U.

IWC = 73% (62 MGD Facility)

### WASTEWATER TREATMENT:

The 42 MGD facility consists of screening, grit removal, primary sedimentation, secondary treatment by activated sludge, secondary clarification, phosphorous removal, nitrification aeration, nitrification clarification, polymer addition, rapid mixing, flocculation, coagulation, sedimentation, filtration, chlorination, dechlorination, and post-aeration; sludge is thickened, anaerobically digested, stored in on-site lagoons, and land applied by contract operator.

#### TMP REQUIREMENTS (2/04-2/09)

OUTFALL 001

42 MGD Facility: Quarterly acute 48-hour static toxicity testing with Ceriodaphnia dubia and Pimephales promelas and 7-day larval survival and growth chronic toxicity with Ceriodaphnia dubia and Pimephales promelas, using 24-hour flow-proportioned composite samples until four quarters of testing are completed. Then annual acute and chronic toxicity testing using the most sensitive species as approved by the DEO staff.

55 MGD/62 MGD Facility: Commencing within 90 days from the issuance of the Certificate to Operate the upgraded facility, the permittee shall begin conducting quarterly acute and chronic toxicity testing commencing within 90 days from the issuance of the Certificate to Operate upgraded facility. Acute 48-hour static toxicity testing with Ceriodaphnia dubia and Pimephales promelas and 7-day larval survival and growth chronic toxicity with Ceriodaphnia dubia and Pimephales promelas, using 24-hour flow-proportioned composite samples.

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Table 2	Acute Test Results f	or WVWA WPC	P; VA0025020, Ou	tfall 001
			% Survival	
Test		$LC_{50}$	in 100%	•
Date	Test Organism	(%)	effluent	Testing Laboratory
06/2004 Q1	C. dubia	> 100	100	Olver Labs
00/2004 Q1	P. promelas	>100	100	Orver Labs
10/2004 Q2	C. dubia	> 100	100	Olver Labs
	P. promelas	>100	100	
12/2004 Q3	<u>C. dubia</u>	> 100	100	Olver Labs
	P. promelas	>100	100	
02/2005 Q4	C. dubia	>100	100	Olver Labs
	P. promelas	>100	100	
11/2005 A1	C. dubia	>100	100	Olver Labs
6/2006 A2	C. dubia	> 100	95	Olver Labs
6/2007 A3	C. dubia	>100	100	Olver Labs
5/2008 Q1	C. dubia	>100	90	Olver Labs
	P. promelas	>100	100	· · · · · · · · · · · · · · · · · · ·
7/2008 Q2	<u>C. dubia</u>	>100	100	Olver Labs
	P. promelas	>100	100	

Notes:

Q = quarter A= annual

Toxics Management Plan Justification for Western Virginia Water Authority WPCP VPDES Permit No. VA0025020 Page 5 of 4

Table 3	Chronic Toxic	ity Test Resu	Its for WVWA WPO	CP VA0025	020, Outfall 001	
					% Survival	
Test	Test	NOEC	NOEC	TUc	in 100%	Testing
Date	Organism	% Survival	%Repro-Growth		Effluent	Laboratory
¢						
6/2004 Q1	C. dubia	. 100	100	1.0	100	Olver Labs
	P. promelas	100	100	1.0	100	
10/2004 Q2	C. dubia	100	100	1.0	100	Olver Labs
	P. promelas	100	100	1.0	100	
12/2004 Q3	C. dubia	100	100	1.0	100	Olver Labs
	P. promelas	100	100	1.0	100	Olver Labs
02/2005 Q4	C. dubia	100	100	1.0	100	Olver Labs
	P. promelas	100	100	1.0	97.5	Olver Labs
11/2005 A1	P. promelas	100	100	1.0	100	Olver Labs
6/2006 A2	P. promelas	100	100	1.0	92,5	Olver Labs
6/2007 A3	P. promelas	100	100	1.0	92.5	Olver Labs
5/2008 Q1	C. dubia	100	100	1.0	90	Olver Labs
	P. promelas	100	100	1.0	100	
7/2008 Q2	C. dubia	100	100	1.0	100	Olver Labs
•	P. promelas	Invalid				
9/2008 Q2	P. promelas	100	100	1.0	100	Olver Labs

Notes:

Q = quarter A= annual

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	L.C <sub>50</sub> , since the ACR divides	es the LC <sub>50</sub> by	the NOEC,	same temperature, same species. LC <sub>50</sub> by the NOEC, LC <sub>50</sub> 's >100%		NOEC must be used,	Ine chronic NOEC must be less than the acute should not be used.	e acute					
116													
117		Table 1. AC	K using Ver	ible 1. ACR using Vertebrate data					Convert	LC <sub>50</sub> 's and I	VOEC's to C	Convert LCso's and NOEC's to Chronic TU's	
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145		#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA		enter it here: NO DATA %LC <sub>50</sub>	NO DATA	%LC50		
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157			DILUTIC	DILUTION SERIES	S TO RECOMMEND	CINEND							
158	Table 4.				Monitoring		Limit						
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163													
164	Dilution series	ries to recommend:	mend:		100.0	1.00	100.0	1.00					
165	-				50.0	2.00	70.0	1.43					
169					25.0	4.00	49.0	2.04					
157					12.5	8.00	34.3	2.92					
158		Title Carpor	to the contract of the contrac	3	6.25	16.00	24.0	4.16					
1 2 2		Cinnin Birki	nean III	2	3.12	32.05	16.8	5.95					
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Cell: IB Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Coll: K18 Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - '<' סר"י').

Cell: J22 Comment: Ramember to change the "N" to "Y" if you have ratios entered, otherwise, they won't be used in the calculations.

Cell: C40

Cell: C41

Comment: If you have entered data to calculate an offluent specific CV on page 2, and this is still defaulted to "0.5", make sure you have selected "Y" in cell E20 if you have entored data to calculate an ACR on page 3, and this is still defaulted to "10", make sure you have selected "P" in celf E21

Cell: L48

Comment: See Row 151 for the appropriate dilution series to use for these NOEC's

Cell: G62
Comment:
Verlebrates are:
Pimephales promelas
Oncothymchus mykiss
Cyprincodon varlegatus

Cell: J62 Comment: Miverabrates are; Ceriodaphnia dubia Mysidopsis bahia

Cell: C117 Comment: Vortebrates are:

Pimephales promelas Cyprinodon variegatus

Call: M119
Comment: The AGR has been picked up from cell C34 on Page 1. If you have paired data to calculate an ACR, enter it in the tables to the left, and make sure you have a "Y" in cell E21 on Page 1. Otherwise, the default of 10 will be used to convert your acute data.

Cell: M121
Comment: If you are only concerned with acute data, you can onter it in the NOEC column for conversion and the number calculated will be equivalent to the TUe. The calculation is the same: 100ANOEC = TUe or 100A.C50 = TUe.

Cell: C138 Comment: Invertebrates are;

Ceriodaphnia dubia Mysidopsis bahia

Spreadsheet for determination of WET test endpoints or WET limits				_	-					i			_		
Except 97   Revision Date: Training   Acute Endpoint/Permit Limit   Use as LC <sub>26</sub> in Special Condition, as TLa on DMR	- 2	Spread		or det	ermina	ation of		st endp	oints o	١.	limits				
Energy   Processor	п														
Fig. 1995   Fig.	4 1	Excel 97			Acute End	point/Permi		Use as LC <sub>so</sub> in	Special Cont	dition, as TU	a on DMR				,
Chicago   Chic		File: WETLI	₹			100% =	NOAEC	: :	-	0%   lea as		4			
Chronic Endointelement Limit		(MIX.EXE requ	ired also)					200	Ę	0 Cad as	Ę	5			-
CHRONIC   2.005442712 TU,   NOBC = 8.0 % Use as 2.44 TU,					ACUTE WL	la	0,39677419	Note: Inform the Tua:	1.0	a limit may re	n of the data sult using W	exceeds LA.EXE			
Effect data in the colis with blue type:   CHENONG   2.005142712 TU,   NOEC =   20 % Libs as   2.50   TU,   1.00516   Multi-   1.02505   Multi-	- I				Chronic Find	hoint/Permit	1 îmit	Ilea as NOEC	in Special Co	T ac notified	DMC on Oli				
Electricate in the colle with blue type:   AMIH   3.867742713 TU,   NOEC =   26 % Libe as   3.49 TU,						The second		Car as more	al openia co	indition, as	ייין אוינון וויי				-
Eliter data in the cells with blue type:   AMI					2	2.005142712	7 =	NOEC =	90	% Use as		ΤŪ			
ACTUTE WALACE   CHRONIC WALACE   CHRON		in the cells w			1	2.005142712	ຼືຊື	NOEC =	20 8	% Use as		בַּ בַ			
Mode								+							
ViviDES Number   ViviOSESTO   Soliments acrossed as chronic   a filter front control to the following processed as chronic   a filter front control to the following processed as chronic   a filter front control to the following processed as chronic   a filter front control to the following processed   a final	Entry Date: Facility Nan		10/28/08   WANANA WIPEP		ACUTE WI	Aa,c	3.96774194		Note: Inform t	the permittee	that if the me	aan			
Courtiest Number   Courtiest N	VPDES Nu	mber:	VA0025020		Both means a	cute expressed	- 10		a limit may res	allt using Wf.	цХц				
Plant Flow.   62 MGD   % Flow to be used from MM.E.XE   Enter YM   1   1   1   1   1   1   1   1   1		ber:	-												
Action   Composition   Compo					% Flow to by	e used from I	IIX.EXE		Difuser /mode	eling study?					-
Chronic TQ10			200		400	70			Enter Y/N	c					
Are data available to calculate CV7 (YN)         N (Minimum of 10 date points, same species, needed)         Go to Page 2           Are data available to calculate ACR? (YN)         N (WDC         (NDC         (CLL.50, Go not use greateness than date)         Go to Page 2           WCs.         72.8411786 % Plant flow/plant flow + 1G10         NOAEC = 100% testendpoint for use         Co to Page 2           WCs.         72.8411786 % Plant flow/plant flow + 1G10         NOAEC = 100% testendpoint for use         Co to Page 2           Dibulon, exclet         137086724         100MVCa         NOAEC = 100% testendpoint for use         Co to Page 2           Dibulon, chronic         137086774         100MVCa         NOAEC = 100% testendpoint for use         Co to Page 2           Dibulon, chronic         137086774 instream citerior (LO TUe) X's Dibulon, chronic units         NOAEC = 100% testendpoint for use         Co to Page 3           WLA <sub>a</sub> 137086774 instream citerior (LO TUe) X's Dibulon, chronic units         NOAEC = 100% testendpoint for use         CVCoefficient of Use 100% testendpoint for use         Rounded NoAEC = 100% testendpoint for use           CVCoefficient of Variation         10 LCSGNVCEC (Default is 10 - if data are available, use tables Page 3         CVCoefficient of Use 100% testendpoint for use         Rounded NoEC = 100% testendpoint for use           EA         10 LCSGNVCEC (Default is 10 - if data are available, use tables Page 3         CVCoef		10:	23 /	9	100				Chronic		,			į	-
Are data available to calculate CAPY (YN)         N (Minimum of 10 data points, same species, needed)         Go to Page 2           Are data available to calculate CAPY (YN)         N (NOEC-LC59 of oncl uses greaterfacts than data)         Go to Page 3           IVVCs         72.3411765 % Plant flow/plant flow + 7Q10         NOMEC = 100% testendpoint for use         Go to Page 3           IVVCs         72.3411765 % Plant flow/plant flow + 7Q10         NOMEC = 100% testendpoint for use         Consist of testendpoint for use           IVVCs         72.3411765 % Plant flow/plant flow + 7Q10         NOMEC = 100% testendpoint for use         Consist of testendpoint for use           Dibulion, acute         1.32258056         100MWCc         NOMEC = 100% testendpoint for use         Consist of testendpoint for use           Dibulion, acute         1.32258056         100MWCc         NOMEC = 100% testendpoint for use         Consist of testendpoint for use           VVLAs         1.37086774 instream criterion (1.0 TU-b) X's Dibulion, acute         NOMEC = 100% testendpoint for use         CONCORDINATION testendpoint for use           VVLAs         1.3708677 instream criterion (1.0 TU-b) X's Dibulion, acute         NOMEC = 100% testendpoint for use         CONCORDINATION testendpoint for use           VVLAs         3.38077419 Acity Acity Acity         1.74 Acity															1
WC_2   75.6097'551 %   Plant flow/plant flow + 1Q10   NOTE: If the WCa is >33%, specify the   NOAEC = 100%, test/endpoint for use   1322-59056   100MVCa   1320-59074   Instream criterion (1.0 TLe) X's Dilution, acute   1,370-59774   Instream criterion (1.0 Tle) X's Dilution, acute   1,370-59774203   Tlu, ac X's Dilution, acute   1,370-59774203   Tlu, ac X's Dilution, acute   1,370-59774203   Instream criterion   1,370-59774203   Instream criterion   1,370-59774203   Instream criterion   1,370-59774203   Instream criterion   1,370-59774203   Instruation   1,370-59774203   Instream criterion   1,370-59774203	Are data av	railable to calci	ate CV7	7=		(Minimum of 1	O data points,	same species, I	needed)		Go to Page 2				
WC <sub>c</sub> 72.6471765 % Plant flow/plant/flow + 1Q10         NOTE: If the WCa is >33%, specify the           IVV <sub>c</sub> 72.9411765 % Plant flow/plant/flow + 1Q10         NOAEC = 100%, testlendpoint for use           Dikulon, acute         1.32263056         100MVCa           Dikulon, chronic         1.322630574         100MVCa           Dikulon, chronic         1.3709677419         Instream criterion (0.3 Tua) Xs Dikulon, acute           Dikulon, chronic         1.3709677419 Instream criterion (0.3 Tua) Xs Dikulon, acute         1.37096774194           MLA <sub>a</sub> 1.3709677419 Instream criterion (0.3 Tua) Xs Dikulon, acute         1.00006774194           MLA <sub>a</sub> 1.37096774194         ACR X's WLA <sub>a</sub> - converts acute WLA in chronic units           MLA <sub>a</sub> 1.37096774 Instream criterion (0.3 Tua) X's Dikulon, chronic         Inc. Converts acute WLA in chronic units           MLA <sub>a</sub> 3.39774194         ACR X's WLA <sub>a</sub> - converts acute WLA in chronic units         ACR - control chronic units           MLA <sub>a</sub> 1.37096774         Instrement of variation of 0.6 - if data are available, use tables Page 2)         ACR - control chronic units           CV-Coefficient of variation of 0.6 - if data are available, use tables Page 2)         ACR - control chronic units         ACR - control chronic units           CV-Coefficient of variation of 0.6 Delault of 0.6 - if data are available, use tables Page 2)         ACR - co		diagon to callo		,	П	The Control of the Co	no lon on the	Date / 1000 II IOI	uala		Go to Page				-
WC_c   72.3417766 % Plant flow/plannershw+ 1Q10   NOAEC = 100% testendopoint for use						0,00				Ì					
Dilution, acute   1,322268056   100MWCa   1,37096774   100MWCa   1,37096774   100MWCa   1,37096774   100MWCa   1,37096774   100MWCa   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,37096774   1,3709677   1,3709677   1,3709677   1,3709677   1,3709677   1,370967   1,3709677   1,3709677   1,3709677   1,3709677   1,370967   1,3709677   1,3709677   1,3709677   1,3709677   1,370967   1,37099					owiplant flow	+ 7010	NO IE: IF THE	D = 100% toef	, specify the	9					
137096774   100MVCa   137096774   137097				1				2000	in a section in						
Mulch, chonic   137096774   100MVCc   100   10		ute	1,32258065	100/lw	VCa										
WILA,         0.39677419 Instream criterion (0.3 Tua) X's Dilution, chronic         acute         Chronic Long         Chronic		Conic	1.37096774	100//	ş										
WILA,         1.37096774 Instream criterion (1.0 TUe) X's Dilution, chronic units         ACR -acute/chronic ratio         1.37096774 Instream criterion (1.0 LC50NOEC (Default is 10 - if data are available, use tables Page 2)         ACR -acute/chronic ratio         1.0 LC50NOEC (Default is 10 - if data are available, use tables Page 2)         ACR -acute/chronic ratio         ACR -acute/chronic ratio </td <td>WLA</td> <td></td> <td>0.39677419</td> <td>nstream crit</td> <td>terion (0.3 TL</td> <td>Ja) X's Dilutior</td> <td>, acute</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	WLA		0.39677419	nstream crit	terion (0.3 TL	Ja) X's Dilutior	, acute								
ACR = acute/bronic ratio   CVC-acticle   Control is acute WILA to chronic units	WLA		1.37096774	nstream crit	terion (1.0 Tt	Jc) X's Dilution	Chronic								-
ACR -acuta/chronic ratio   10 LC50N/OEC (Default is 10 - if data are available, use tables Page 3   Constants   SA	WLAze		3.96774194	CR X's WL	A - convert	s acute WLA t	o chronic units								
CV-Coefficient of varietion         0.6 Default of 0.6 - if data are available, use tables Page 2)           Constants leA         0.4109447 Default = 0.60           eD         2.433477 Default = 2.43           eD         2.433477 Default = 2.43           ind         1.17A <sub>sc</sub> eD         2.433477 Default = 2.43           ind         1.17A <sub>sc</sub> 1.17A <sub>sc</sub> <t< td=""><td>ACR -acute</td><td>/chronic ratio</td><td></td><td>CSONOEC</td><td>(Default is</td><td>10 - if data are</td><td>available, use</td><td>tables Page 3)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></t<>	ACR -acute	/chronic ratio		CSONOEC	(Default is	10 - if data are	available, use	tables Page 3)							1
Constants   EA	CV-Coeffici	ent of variation		Default of 0.	6 - If data an	e available, us	e tables Page	2)							
EC   2,4334775   Default = 2.43   September   EVA   EVA   September   EVA	Constants		0.4109447 [	Default = 0.4	41										
ED   2.4334176   Default = 2.43 (1 samp)   "The Maximum Daily Limit is calculated from the lowest   LTA_sc		၁ဓ	2.4334175	Default = 2.4	43										
LTA_se		G	2.4334175	Default = 2.4	43 (1 samp)		**The Maximun	Daily Limit is ca	deulated from th	he lowest					
1.03592222   WLAs, S & A			0.00000	-   ;	1		LTA, X's eC. Ti	he LTAa,c and Mt	OL using it are d	driven by the A	CR.				
MOL** with LTA_s   10.6240.027   VULCA S & BOE   25.203.251   (Protects from acute/chronic toxicity)   NOEC =   NOEC =   MOL** with LTA_s   2.0051.4271   TU_c   NOEC =   49.871762   (Protects from chronic toxicity)   NOEC =			1.63052252	WLAa,c X's	eA G										
MOLECTION   10   MOLE			0.62400275	WLACA'S E			-				Rounded NC		%		٠
MOEC			3.90774203			25.2U3257	_!_	m acute/chronic	toxicity)		NOEC =	2	% 9		_
FONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU, to TU,   Use NOAEC=100%   LC50 = A98.717619 %   Use NOAEC=100%   LC50 = NA   LC50 = A98.717619 %   Use NOAEC=100%   LC50 = NA   LC50 = A98.717619 %   Use NOAEC=100%   LC50 = NA   LC50 = A98.717619 %   Use NOAEC=100%   LC50 = NA   LC50 = A98.717619 %   Use NOAEC=100%   LC50 = NA   LC50 = A98.717619 %   Use NOAEC=100%   LC50 = A98.717619 %   LC50 = A98.7176	AMI with h		2 00514271			49.871762	- 1 -	m chronic toxic	(A)		NOEC=	نا م <u>ن</u> ا	%		
IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU, to TU,         No TU,         Rounded LC50's           MDL with LTA,c         0.3967742         TU,         LC50 = 252.032514         We NOAEC-100%         LC50 = NA           MDL with LTA,c         0.20051427         TU,         LC50 = 498.717619         We NOAEC-100%         LC50 = NA	2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		7.000.7		200	49.071 1/02	LOWest LIA A	Cas.			NOEC ::	2			
MDL with LTA <sub>s</sub> 0.3367742         TU <sub>s</sub> LC50 =         252.032514         %         Use NOAEC=100%         LC60 =         NA           MDL with LTA <sub>s</sub> 0.20051427         TU <sub>s</sub> LC50 =         498.717619         %         Use NOAEC=100%         LC50 =         NA		ACUTE ENDF		NEEDED, (	CONVERT M	IDL FROM TU	to Tu								-
MDL with LTA <sub>s</sub> 0.3867742 TU <sub>s</sub> 1.C50 = 252,032514 % Use NOAEC=100% 1.C60 = NA MDL with LTA <sub>s</sub> 0.20051427 TU <sub>s</sub> 1.C50 = 498.717619 % Use NOAEC=100% 1.C50 = NA											Rounded LC	50's	%		
MDL WIN L.Ms. LAST 104 LC50 = 498.717619 % Use NOAEC=100% LC50 =		TA <sub>a,e</sub>	3967742		LC50 =	252,032514	%	Use NOAEC=1	%00		C20 =	NA	%		
	MDL with L	TĀ.	20051427		LC50 =	498.717619	%	Use NOAEC≔1	%00.			NA A			

59   Page   Pa	IC 2 - FO DU HAVE A SPECIE NINGWITH NIN	Ilow the directions to develop a site specific CV (coefficient of variation)	Op a site spin op a site spin op a site spin op a site spin op	Specific CV Vertebrate C <sub>2s</sub> Data or C <sub>2s</sub> Data or control or cont	(coefficient LN of data	t of variation of the state of	tion) Invertebrate IC <sub>28</sub> Data or IC <sub>58</sub> Data	LN of data		
	10	irrections to devel  DATA POINTS THAT  CYOR"S") HE DATA IN EITHER HE COLUMN ALLES FOR eA, HE THE CV IS	1   1   1   1   1   1   1   1   1   1	rrebrate 2a Data 25a	(Coefficient	10 f variation of	invertebrate Cas Data or LCas Data	LN of data		
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11   1989 3 - Colory directions to develop a site specific ACR (Authe to Chronic Ratio)   11   11   12   12   13   13   13   13	112 113 To determine 114 acute and ch 115 LC <sub>50</sub> , since th	l ⇔ !	סון	officer fr	-	и	-	, ,	0					
Colorania and Zonocci, tracked, Track (Class)   Francis (Class)			1	ברוסווים נר	develop	ত	IIIC ACK (	Acute to Ci	Profile Kat	(0)				i
Set # Nu.	acute and ch LC <sub>50</sub> , since th	Acute/Chror	nic Ratio (ACR	), insert usa	ble data belo	w. Usable dat	a is defined a	s valid paired te	ast results,					
Table 1, ACR using Verterrate data   Table 1, ACR using Verterrate data   Antibo ACR to Use   Table 2, ACR using membrase data;   ANTIBO ACR to Use   ANTIBO ACR to	-	ronic, tested te ACR divid	at the same to es the LC <sub>50</sub> by	Ine NOEC.	same specie LC <sub>50</sub> 's >100	s. The chronic % should not b	NOEC must be used,	be less than the	acute					
Set 8				2 using Ven	tehrate data					1000	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOEC'S CA	Parce Tille	
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10 #PU/N #PU/A #PU/A #PU/A #PU/A MODATA	æ		#N/A	#N/A	#N/A	#N/A		NO DATA		2	NODATA		NO DATA	
#N/A #N/A #N/A #N/A #N/A #N/A #N/A MODATA    Table 1. Result	6		#N/A	#N/A	#N/A	#N/A		NO DATA			NO DATA		NO DATA	
Table 1, Result:   Verdebrate data;   Table 2, Result:   Investbrate data   Table 2, Result:   Investbrate ACR   Defaut to 10     Table 3, Result:   Investbrate ACR   Logarithm   Geomean   Author   A	10		#N/A	#N/A	#N/A	#N/A		NO DATA		6	NO DATA		NO DATA	
Table 1, Result.   Vertebrate ACR   Default to 10     Table 2, Result.   Invest ACR   Logarithm   Geomean   Antilog ACR to Use     #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA #WA WA WO DATA     #WA #WA #WA #WA #WA #WA #WA #WA WA WA WO DATA     #WA										10	NO DATA		NO DATA	
Table 1. Result:   Vertebrate ACR   Default to 10     Table 2. ACR using Invertebrate ACR   Default to 10     Table 2. ACR using Invertebrate ACR   Lonarthm   Geomean   Antition   Acr to Use					ACR for ven	ebrate data:		0		11	NO DATA		NO DATA	
Table 1. Result:   Veriebrate ACR   Default to 10										12	NO DATA		NO DATA	
Table 2, Result:   Invertebrate ACR   Default to 10			-		Vertebrate A	CR		0		13	NO DATA		NO DATA	]
Table 2. ACR using Invertebrate data   Antion					Invertebrate	ACR		0		7	NO DATA		NO DATA	
Table 2. ACR using Invertebrate data   Table 2. ACR using Invertebrate data   Hu/A					Lowest ACR			Default to 10		15	NO DATA		NO DATA	
Table 2. ACR using Invortebrate data										16	NO DATA		NO DATA	
LCss   NOEC   Test ACR   Logarithm   Geomean   Antilog ACR to Use			Ι.	R using Inve	ortebrate da	ta				17	ATAC ON		NODATA	
LCan   NOEC   Test ACR   Logartism   Geomean   Antilog ACR to Use										- 8	NO DATA		NO DATA	
#WA #WA #WA #WA #WA #WA #WA WA #WA #WA #										25	NO DATA		NO DATA	
#N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	Set #	LC	S		Logarithm	Geomean	Antiloa	ACR to Use		20	ATAC ON		NO ON	
#N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A WNO DATA #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	1	#N/A	¥N#		#N/A	#N/#	1	NO DATA						
#N/A #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	N	#N/A	#W/A	#N/A	#N/A	#N/A		NO DATA		If WLA EXE determ	ines that an acute	e limit is needed	war need to	
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#N/A #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A WO DATA #N/A #N/A #N/A #N/A #N/A #N/A WO DATA #N/A #N/A #N/A #N/A #N/A #N/A WO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	4	W/W#	#N/A	∀/N#	#N/A	#N/A	#N/A	NO DATA		enter it here:	NO DATA	MCE"		
#N/A #N/A #N/A #N/A WA/A NO DATA #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	ಚ	#WA	#N/A	#WA	#W/A	#N/A	#N/A	NO DATA			ATACI ON	S 9 1		Ī
#N/A #N/A #N/A #N/A #N/A #N/A #N/A WAN/A #N/A WAN/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A	9	#N/A	#N/A	W/N#	#N/A	#N/A		NO DATA			2	5		
#N/A #N/A #N/A #N/A #N/A #N/A #N/A WO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/	7	W/V#	#N/A	#N/A	#N/A	#N/A		NO DATA						
#N/A #N/A #N/A #N/A #N/A #N/A NO DATA #N/A #N/A #N/A #N/A #N/A MO DATA #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/	80	#WA	#N/A	#N/A	#N/A	#N/A	ŀ	NO DATA						
#N/A #N/A #N/A #N/A #N/A #N/A NO DATA  ACR for vertebrate data: 0  ACR for vertebrate data: 0  DILUTION SERIES TO RECOMMEND Limit Monitoring Limit We Efflient TUC % Effluent TUC Plution series to use for limit 0.5 0.5 0.7071068  Dilution series to recommend: 100.0 1.00 50.0 100.0 1	6	#N/A	#WA	W/W#	#N/A	#N/A		NOPATA						
ACR for vertebrate data: 0   ACR for vertebrate data: 0   DILUTION SERIES TO RECOMMEND   Limit   Monitoring   Limit   Monitoring   Limit   Wellient   TUC   Welfluent   TUC   Seffluent   Seff	10	#N/A	#W/A	#N/A	#N/A	#N/A		NO DATA						
DILUTION SERIES TO RECOMMEND   Limit   Monitoring   Limit   Monitoring   Limit   Limit   Monitoring   Limit   Limit   Monitoring   Limit   Limit   Monitoring   Limit   Monitoring   Limit   Monitoring   Limit   Limit   Monitoring   Limit   Monitoring   Limit   Monitoring   Limit   Limit   Monitoring   Limit   Monitoring   Monit				_										
DILUTION SERIES TO RECOMMEND   Limit   Wonltoring   Limit   We Effluent   TUC   % Efflu					ACR for ven	ebrate data:		0						
DILUTION SERIES TO RECOMMEND   Limit   Monitoring   Limit   Limit   Monitoring   Limit   Limit   Limit   Limit   Monitoring   Limit   Li														
DILUTION SERIES TO RECOMMEND   Limit   Wonitoring   Limit   Wonitoring   Limit   Welfluent   TUc   Series to use for limit   0.5   0.5   0.707   1000   10														
DILUTION SERIES TO RECOMMEND   Limit   Wonltoring   Limit   We Effluent   TUC   % Efflu														
Compared to the commend:   Compared to the com				OITH NA	NCEDIE	S TO DECO	DANACAID							
Monitoring         Limit           Affillent         TUC         % Effluent         FILLENT           eries based on data mean         100         1.0         50           actor to use for limit         0.5         0.7071068           actor to recommend:         0.5         0.7071068           eries to recommend:         50.0         2.00         70.7           25.0         4.00         50.0         35.4           25.0         12.5         17.7           Extra dilutions if needed         3.12         32.05         17.7           Extra dilutions if needed         1.56         64.10         12.5				512	IN OLIVIE	I O NEOC	MINITIAL							
mean % Effluent TUc % Effluent TUc 100 1.0 50 50 1.7071068 1.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00		able 4.		_		Manitoring		Limit				_		,,,,
mean 100 1.0 50 50 50 60.0 1.00 50 0.7071068 10.00 1.00 10.0						% Effluent	The	П	٦! <u>۲</u>					
50 0.5 0.7071068 100.0 100		Dilution ser	1-	data mes	5	100	_	Т	20					
. 100.5 0.7071068 . 100.0 1.00 100.0 50.0 2.00 70.7 25.0 4.00 50.0 12.5 16.00 25.0 6.25 16.00 25.0 1.56 64.10 12.5		Dilution on		י ממום וו ופנ		2			ľ					
. 100.0 1.00 100.0 100.0 100.0 100.0 100.0 100.0 100.0 1		nag uciniici	nes to use ro	L IIII				90	2					
100.0 1.00 100.		Dilution fac	tor to recom	mend:		0.5		0.7071068						
100.0	_													
60.0 2.00 70.7 25.0 4.00 50.0 12.5 8.00 35.4 6.25 16.00 25.0 6.25 17.7 6.410 12.5		Dilution ser	ies to recom	mend:	•	100.0	1.00	100.0	1.00	,				
25.0 4.00 50.0 12.5 8.00 36.4 112.5 8.00 36.4 112.5 16.00 25.0 11.56 64.10 12.5						50.0	2 00	707	1 41			-		
12.5 8.00 35.4   12.5 8.00 35.4   12.5   17.7   12.5   1						25.0	20 1	200	100		-			
Extra dilutions if needed 3.12 32.05 17.7 12.5 14.10 12.5						12 5	200	7 70	200					
Extra dilutions if needed 3.12 32.05 17.7 1.56 64.10 12.5						2.2	9.0	90.4	2,83					
Extra dilutions if needed 3.12 32.05 17.7				- 1.		6.25	16.00	25.0	4.00					
1.56 64.10 12.5			Extra dilutio	:=:	þe	3.12	32.05	17.7	5.66					
						1.56	64.10	12.5	8.00		_			T
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		***************************************									į			

This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">"). Coll: 19

Cell: K18 Comment: This is assuming that the data are Type 2 data (none of the data in the data sot are censored - "<" or ">").

Call: J22 Comment: Remember to change the "V" to "V" if you have ratios entered, otherwise, they won't be used in the calculations

Cell; C40

Coll: C41
Comment: if you have onfered data to calculate an effluent specific CV on page 2, and thits is still defaulted to "0.6", make sure you have selected "Y" in cell E20 Comment: If you have entered data to calculate an ACR on page 3, and this is still defaulted to "10", make sure you have selected "7" in coll E21

Celt: L4B
Comment:
Sec Row 151 for the appropriate dilution series to use for these NOEC's

Cell: G62

Comment:
Verlebrates are:
Pimophales promolas
Oncorbynchus mykiss
Opprinodon variogatus

Cell: J62

Invertebrates are: Ceriodaphnia dubia Mysidopsis bahia

Call: C117 Comment: Vortebrates arc:

Pimophalos promelas Cyptinodon variegatus

Cell: M119 Comment: The AGR has been picked up from cell C34 on Page 1. If you have paired data to calculate an ACR, enter it in the tables to the left, and make sure you have a "V" in cell E21 on Page 1. Otherwise, the default of 10 will be used to convert your acute data. Cell: M121
Comment: If you are only concerned with acute data, you can enter it in the NOEC column for conversion and the number calculated will be equivalent to the TUs. The calculation is the same; 100NOEC = TUc or 100A.CSD = TUs.

Cell: C138 Comment: Invertebrates are:

Ceriodaphnia dubia Mysidopsis bahia

# Attachment P

# **Storm Water Data**

- Storm Water Data (Outfalls 007, 008, 009)
- Storm Water Lab Summary Data Sheets

# Storm Water Data Form 2F, Part VII

### Outfall 007

Sample Date	BOD₅ (mg/L)	COD (mg/L)	TSS (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Oil and Grease (mg/L)	pH (S.U.)	TKN (mg/L)	CN, TR (ug/L)	Cr, VI (ug/L)	Ni, TR (ug/L)		Se, TR (ug/L)
Decision Criteria	30	120	100	2.2	2		6-9	1.5	200	7.1	28	19	4.6
					2 (2	- 0			0.0	4.5		40.0	
9/10/08 grab	29	30	16	1.02	0.40	<5.0	7.51	1.4	<20	<10	6.2	<10.0	<20.0
9/10/08 composite	4	28	18	0.76	0.32			<1.0		<10.0	<5.0	<1.0	<20.0

### Outfall 008

'				Total	Total	Oil and			CN,			1	Se,
<b>'</b>	BOD <sub>5</sub>	COD	TSS	Nitrogen	Phosphorus	Grease	рН	TKN	TR	Cr, VI	Ni, TR	Hg,TR	TR
Sample Date	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U.)	(mg/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Decision Criteria	30	120	100	2.2	2		6-9	1.5	200	7.1	28	19	4.6
7/19/04 grab						<5	7.36		·				
7/19/04 composite	7	64	58	2.78	0.417							1	
8/26/08 grab	32	202	78	0.63	0.84	<5.0	7.48	3.8	<20	. <10	6.2	<1.0	<20.0
8/26/08 composite	4	33	52	0.3	0.37			1.0		<10.0	<5.0	<1.0	<20.0

## Outfall 009

Sample Date	BOD₅ (mg/L)	COD (mg/L)	TSS (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Oil and Grease (mg/L)	pH (S.U.)	TKN (mg/L)	CN, TR (ug/L)	Cr, VI (ug/L)	Ni, TR (ug/L)		
Decision Criteria	30	120	100	2.2	2		6-9	1.5	200	7.1	28	19	4.6
1/5/07 grab		<20	2.2	1.3	0.037.	<5	7.51						
7/7/04 composite	<3	64	15	1.48	0.131								
5/28/08 grab	<2	73	13	1.39	0.44	<5.0	7.68	2.7	<20	<10	<5.0	<1.0	<20.0
5/28/08 composite	<2	56	12	0.57	0.34	ŧ		2.0		<10	<5.0	<1.0	<20.0

**Analytical Results** 

Date: 17-Sep-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW 007 GRAB

Project:

STORM WATER 007

Site ID:

WorkOrder:

Lab ID:

0809739-01A

0809739

Collection Date: 9/10/2008 11:19:00 AM

Matrix:

SURFACE WATER

Analyses	Result Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP	<u> </u>	E200.7			Analyst: ВМ	•
Nickel	ND mg/L		0.0050	NA	09/11/D8 8:25 AM	09/11/08 6:56 PM
Selenium	ND mg/L		0.0200	NA	09/11/08 B:25 AM	09/11/08 6:56 PM
MERCURY, TOTAL		E245.1			Analyst: CGW	,
Mercury	ND mg/L		0.0010	NA	09/12/08 10:27 AM	09/16/08 10:23 AM
HEXAVALENT CHROMIUM, DISSOLVED		SM3500-CR D			Analyst: CGW	
Chromium, Hexavalent	ND mg/L	•	0,010	NA		09/11/08 8:36 AM
BOD, 5 DAY, 20°C		SM5210 B			Analyst: JaR	
Blochemical Oxygen Demand	29 mg/L		2	NA	09/11/08 6:50 AM	09/16/08 7:48 AM
CHEMICAL OXYGEN DEMAND		E410.4			Analyst: DSA	
Chemical Oxygen Demand	30 mg/L		10	NA	•	09/12/08 4:10 PM
CYANIDE		E335.4			Analyst: BA	
Cyanide, Total	ND mg/L		0.020	NA		09/12/08 2:00 PM
ANIONS BY ION CHROMATOGRAPHY		SM4110B			Analyst: JJ	
Nitrogen, Nitrate-Nitrite	1.02 mg/L		0.10	NA		09/12/08 2:33 AM
PHOSPHORUS		SM4500-P BE			Analyst: GV	
Phosphorus, Total	0.40 mg/L		0.05	NA		09/17/08 1:00 PM
TOTAL KJELDAHL NITROGEN (TKN)		SM4500-NORGC			Analyst: JL	
Nitrogen, Kjeldahl, Total	1.4 mg/L		1.0	NA		09/15/08 7:00 AM
DIL AND GREASE		E1664			Analyst: JL	
Oil & Grease	ND mg/L	**************************************	5.0	NA		09/15/08 8:30 AM
TOTAL SUSPENDED SOLIDS	_	SM2540 D			Analyst: <b>GV</b>	
Total Suspended Solids	16 mg/L	CHIZONU D	1	NA	Analyst. 198	09/11/08 8:50 AM

Key:	MCL	Maximum Contaminani L	evel
-			

MDL Minimum Detection Limit

Not Applicable

Not Detected at the PQL or MDL

PQL. Practical Quantitation Limit

TIC Tentatively Identified Compound, Estimated Concentrati

Qualifiers: B

Analyte detected in the associated Method Blank

Estimated Value above quantitation range

Holding times for preparation or analysis exceeded

Spike/Surrogate Recovery outside accepted recovery limit

Value exceeds Maximum Contaminant Level

Page 2 of 3

**Analytical Results** 

Date: 17-Sep-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW 007 COMP

Project:

STORM WATER 007

Site ID:

WorkOrder:

0809739

Lab ID:

0809739-02A

Collection Date: 9/10/2008 3:10:00 PM

Matrix:

SURFACE WATER

Analyses	Result Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP		E200.7	•		Analyst: BM	
Nickel	ND mg/L		0.0050	NA	09/12/08 9:53 AM	09/15/08 4:47 PM
Səlenium	ND mg/L		0.0200	NA	09/12/08 9:53 AM	09/15/08 4:47 PM
MERCURY, TOTAL		E245.1			Analyst: CGW	,
Mercury	ND mg/L		0.0010	NA	09/12/08 10:27 AM	1 09/16/08 10:24 AM
HEXAVALENT CHROMIUM, DISSOLVED		SM3500-CR D			Analyst: JD	
Chromium, Hexavalent	ND mg/L		0.010	NA	09/12/08 9:53 AM	09/11/08 4:34 PM
BOD. 5 DAY, 20°C		SM5210 B			Analyst: JaR	
Biochemical Oxygen Demand	4 mg/L		2	NA	09/12/08 12:46 PM	09/17/08 9:36 AM
CHEMICAL OXYGEN DEMAND		E410.4			Analyst: DSA	
Chemical Oxygen Demand	28 mg/L		10	NA		09/12/08 4:10 PM
ANIONS BY ION CHROMATOGRAPHY		SM4110B			Analyst: <b>JJ</b>	
Nitrogen, Nitrate-Nitrite	0.76 mg/L		0.10	NA		09/13/08 3:18 AM
PHOSPHORUS		SM4500-P BE			Analyst: GV	
Phosphorus, Total	0.32 mg/L		0.05	NA		09/17/08 1:00 PM
TOTAL KJELDAHL NITROGEN (TKN)		SM4500-NORGC			Analyst: JL	
Nitrogen, Kjeldahi, Total	ND mg/L		1.0	NA	-	09/15/08 7:00 AM
TOTAL SUSPENDED SOLIDS		SM2540 D			Analyst: GV	
Total Suspended Solids	18 mg/L		1	NA		09/12/08 8:20 AM

Key:	MCL	Maximum	Contaminant	Level
,.		1-44444		

MDL Minimum Detection Limit

NA Not Applicable

Not Detected at the PQL or MDL

PQL Practical Quantitation Limit

TIC Tentatively Identified Compound, Estimated Concentrati

Qualifiers: B

Analyte detected in the associated Method Blank

E Estimated Value above quantitation range

H Holding times for preparation or analysis exceeded

Spike/Surrogate Recovery outside accepted recovery limit

Value exceeds Maximum Contaminant Level

Page 3 of 3

**Analytical Results** 

Date: 10-Sep-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW008 GRAB

Project:

STORM WATER

Site ID:

WorkOrder:

0808163

Lab ID:

0808I63-02A

Collection Date: 8/26/2008 6:30:00 PM

Matrix:

SURFACE WATER

Site iD:	MINISTER.	30				
Analyses	Result Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP		E200.7			Analyst: BM	
Nickel	0.0062 mg/L		0.0050	NA	08/28/08 10:14 Af	M 08/28/08 2:23 PM
Selenium	ND mg/L		0.0200	NA	08/28/08 10:14 AF	M 08/28/08 2:23 PM
MERCURY, TOTAL		E245.1		•	Analyst: CGV	ď
Mercury	ND mg/L		0.0010	NA	08/28/08 10:55 AM	M 09/03/08 11:04 AM
HEXAVALENT CHROMIUM, DISSOLVED Chromium, Hexavalent NOTES: Analyzed by 200.9 for total Chromium within 2	ND mg/L	SM3500-CR D	0.010 t chromium not r	NA present at c		// 08/27/08 4:53 PM
•		SM5210 B		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Analyst: JaR	·
BOD, 5 DAY, 20°C Biochemical Oxygen Demand	32 mg/L	31113210 8	2	NA	08/28/08 6:32 AM	09/02/08 8:38 AM
	or mgr		-			55,42,55 5,42 1,111
CHEMICAL OXYGEN DEMAND Chemical Oxygen Demand	202 mg/L	E410.4	10	NA	Analyst: DSA	08/29/08 3:30 PM
	Zoz mgr.		,0	1415		20/20/00 0,00 / 10/
CYANIDE		E335.4			Analyst: BA	
Cyanide, Tolai	ND mg/L		0,020	NA		09/04/08 12:30 PM
ANIONS BY ION CHROMATOGRAPHY		SM4110B			Analyst: SB	
Nitrogen, Nitrate-Nitrite	0.63 mg/L		0.10	NA		09/02/08 7:39 PM
PHOSPHORUS		SM4500-P BE			Analyst: SB	•
Phosphorus, Total	0.84 mg/L	4 - 4	0.50	NΑ		09/04/08 10:45 AM
OTAL KJELDAHL NITROGEN (TKN)		SM4500-NORGC			Analyst: JL	
Nitrogen, Kjeldahl, Tolal	3.8 mg/L		1.0	NA		08/28/08 7:00 AM
OIL AND GREASE		E1664	•		Analyst: JL	
Oll & Grease	ND mg/L		5.0	NA	-	08/28/08 8:00 AM
OTAL SUSPENDED SOLIDS		SM2540 D			Analyst: GV	
Total Suspended Solids	78 mg/L	Dissort &	1	NA	. monyon Ot	08/28/08 7:45 AM
	· - · · · · · ·					<u>.</u>

Key:	MĆL	Maximum Contaminant Level	Qualifiers:	В	Analyte detected in the associated Method Blank		
	MDL	Minimum Detection Limit		E	Estimated Value above quantitation range		
	NA Not Applicable		H	Holding times for preparation or analysis exceeded			
	ND	Not Detected at the PQL or MDL		5	Spike/Surrogate Recovery outside accepted recovery limit		
	PQL	Practical Quantitation Limit		*	Value exceeds Maximum Contaminant Level Page 3 of 3		

TIC Tentatively Identified Compound, Estimated Concentrati

**Analytical Results** 

Date: 10-Sep-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW008 COMP

Project:

STORM WATER

Site ID:

WorkOrder: 0808163

Lab ID:

0808163-01A

Collection Date: 8/27/2008 7:20:00 AM

Matrix:

SURFACE WATER

Site ID:			Matrix:	80	RPACE WATER	
Analyses	Result Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP		E200.7			Analyst: BM	· ·
Nickel	ND mg/L		0.0050	NA	08/28/08 10:14 AM	08/28/08 2:12 PM
Selenium	ND mg/L		0.0200	NA	08/28/08 10:14 AM	08/28/08 2:12 PM
MERCURY, TOTAL		E245.1			Analyst: CGW	
Mercury	ND mg/L		0.0010	NA	08/28/08 10:55 AM	09/03/08 11:02 AM
HEXAVALENT CHROMIUM, DISSOLVED		SM3500-CR D			Analyst: JD	
Chromium, Hexavalent NOTES:	ND mg/L		0.010	NA	08/28/08 10:14 AM	08/27/08 4:43 PM
Analyzed by 200.9 for total Chromium within 20	00.9 hold lime. Re	esults verify hexavalent	chromium not p	resent at o	r above the detection	ilmit.
30D, 5 DAY, 20°C	•	SM5210 B			Analyst: JaR	× .
Blochemical Oxygen Demand	4 mg/L		2	NA	08/28/08 6:30 AM	09/02/08 8:36 AM
HEMICAL OXYGEN DEMAND		E410.4			Analyst: DSA	
Chemical Oxygen Demand	33 mg/L		10	NA		08/28/08 12:30 PM
ANIONS BY ION CHROMATOGRAPHY		SM4110B			Analyst: SB	•
Nitrogen, Nitrate-Nitrite	0.30 mg/L		0.10	NA		09/02/08 7:39 PM
PHOSPHORUS		\$M4500-P BE	•		Analyst: SB	
Phosphorus, Total	0.37 mg/L		0.25	NA	-	09/03/08 9:45 AM
OTAL KJELDAHL NITROGEN (TKN)	•	SM4500-NORGC			Analyst: JL	•
Nitrogen, Kjeldahl, Total	1.0 mg/L		1.0	NA		08/28/08 7:00 AM
OTAL SUSPENDED SOLIDS	,	SM2540 D			Analyst: <b>GV</b>	
Total Suspended Solids	52 mg/L		1	250	<del>-</del>	08/28/08 7:45 AM

Key:	MCL	Maximum Co	លផេយលេខ ២	CYC

MDL Minimum Detection Limit

Not Applicable NA

Not Detected at the PQL or MDL

PQL Practical Quantitation Limit

Tentatively Identified Compound, Estimated Concentrati

Qualifiers: B

Analyte detected in the associated Method Blank

Estimated Value above quantitation range

Holding times for preparation or analysis exceeded

Spike/Surrogate Recovery outside accepted recovery limit

Value exceeds Maximum Contaminant Level

Page 2 of 3

# **Analytical Results**

Date: 05-Jun-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW 009 GRAB

Project:

STORMWATER 009

Site ID:

WorkOrder:

0805H84

Lab ID;

0805H84-01A

Collection Date: 5/28/2008 1:57:00 PM

Matrix:

STORMWATER

Analyses	Result	Units	Qual	MDL	PQL	Date Analyzed
METALS BY ICP-MS			E200.8			Analyst: DBB
Nickel	ND	mg/L		NA	0.0100	6/2/2008 10:51:21 AM
Setenium	ND	mg/L		NA	0.0050	6/2/2008 10:51:21 AM
MERCURY, TOTAL			E245.1			Analyst: DL
Mercury	ND	mg/L		NA	0,0010	5/30/2008 1:38:00 PM
HEXAVALENT CHROMIUM, DISSOLVED			SM3500-CR D	)		Analyst: CHW
Chromium, Hexavaleni	ND	mg/L		NA	0.010	5/29/2008 11:41:00 AM
/-COLI BLUE24			E10029			Analyst: <b>KK</b>
E-Coll	> 32000	col/100mL		NA	1	5/29/2008 4:40:00 PM
30D, 5 DAY, 20°C			SM5210 B			Analyst: BS
Blochemical Oxygen Demand	ND	mg/L		NA	2	6/3/2008 1:02:00 PM
HEMICAL OXYGEN DEMAND			E410.4			Analyst: DSA
Chemical Oxygen Demand	73	mg/L		NA	10	5/30/2008 12:40:00 PM
YANIDE			E335.4			Analyst: BA
Cyanide, Total	ND	mg/L		NA	0.020	6/2/2008 12:10:00 PM
NIONS BY ION CHROMATOGRAPHY			SM4110B			Analyst: SB
Nitrogen, Nitrate-Nitrite	1.39	mg/L		NA	0.10	6/2/2008 8:22:00 PM
HOSPHORUS		•	SM4500-P BE			Analyst: SB
Phosphorus, Tolal	0.44	mg/L	•	NA	0.05	6/9/2008 9:15:00 AM
OTAL KJELDAHL NITROGEN (TKN)		,	SM4500-NORGO	3		Analyst: JL
Nitrogen, Kjeldahl, Tolal	2.7	mg/L	<u>:</u>	NA	1.0	6/3/2008 7:30:00 AM
IL AND GREASE			E1664			Analyst: JL
Oil & Grease	ND	mg/L		NA	5.0	6/4/2008 9:30:00 AM
OTAL SUSPENDED SOLIDS			SM2540 D			Analyst: GV
Total Suspended Solids	13	mg/L		NA	1	5/30/2008 8:00:00 AM

Key:	MCL	Maximum Contaminant Level
	MDL	Minimum Detection Limit
	NA	Not Applicable
	ND	Not Detected at the PQL or MDL
	PQL	Practical Quantitation Limit
	TIC	Tentatively Identified Compound, Estimated Concentration

- Analyte detected in the associated Method Blank
- E Estimated Value above quantitation range
- H Holding times for preparation or analysis exceeded
- Spike/Surrogate Recovery outside accepted recovery limits
- Value exceeds Maximum Contaminant Level

**Analytical Results** 

Date: 05-Jun-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW 009 GRAB Project:

STORMWATER 009

Site ID:

WorkOrder:

0805H84

Lab ID:

0805H84-01A

Collection Date: 5/28/2008 1:57:00 PM

Matrix:

STORMWATER

Analyses	Result	Units	Qual	MDL	PQL	Date Analyzed
METALS BY ICP-MS Nickel	ND	mg/L	E200.8	NA	0.0100	Analyst: <b>DBB</b> 6/2/2008 10:51:21 AM
Selenium	ND	mg/L		NA	0.0050	6/2/2008 10:51:21 AM
MERCURY, TOTAL Mercury	ND	mg/L	E245.1	NA	0.0010	Analyst: <b>DL</b> 5/30/2008 1:38:00 PM
HEXAVALENT CHROMIUM, DISSOLVED Chromium, Hexavalent	ND	mg/L	SM3500-CR D	NA	- 0.010	Analyst: <b>CHW</b> 5/29/2008 11:41:00 AM
M-COLI BLUE24 E-Coli	> 32000	col/100mL	E10029	NA	1	Analyst: <b>KK</b> 5/29/2008 4:40:00 PM
BOD, 5 DAY, 20°C Biochemical Oxygen Demand	ND	mg/L	SM5210 B	NA	2	Analyst: <b>BS</b> 6/3/2008 1:02:00 PM
CHEMICAL OXYGEN DEMAND  Chemical Oxygen Demand	73	mg/L	E410.4	NA	10	Analyst: <b>DSA</b> 5/30/2008 12;40:00 PM
CYANIDE Cyanide, Total	ND	mg/L	E335.4	NA	0.020	Analyst: <b>BA</b> 6/2/2008 12:10:00 PM
ANIONS BY ION CHROMATOGRAPHY Nitrogen, Nitrate-Nitrite	1.39	mg/L	SM4110B	NA	0.10	Analyst: <b>SB</b> 6/2/2008 8:22:00 PM
PHOSPHORUS Phosphorus, Total	0.44	mg/L	SM4500-P BE	NA .	0.05	Analyst: <b>SB</b> 6/3/2008 9:15:00 AM
TOTAL KJELDAHL NITROGEN (TKN) Nitrogen, Kjeldahl, Total	2.7	mg/L	SM4500-NORGO	NA	1.0 ·	Analyst: <b>JL</b> 6/3/2008 7:30:00 AM
OIL AND GREASE Oil & Grease	ND	mg/L	E1664	NA	5.0	Analyst: <b>JL</b> 6/4/2008 9:30:00 AM
TOTAL SUSPENDED SOLIDS Total Suspended Solids	13	mg/L	SM2540 D	NA	1	Analyst: <b>GV</b> 5/30/2008 8:00:00 AM

Key:	MCL	Maximum Contaminant Leve
	MEM	Minimum Detection Limit

Not Applicable

Not Detected at the PQL or MDL

PQL Practical Quantitation Limit

Tentatively Identified Compound, Estimated Concentration

Analyte detected in the associated Method Blank

Estimated Value above quantitation range

Holding times for preparation or analysis exceeded

Spike/Surrogate Recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level

# **Analytical Results**

Date: 05-Jun-08

CLIENT:

WESTERN VA WATER WWTP

Client Sample ID: SW 009 COMP

Project:

STORMWATER 009

Site ID:

WorkOrder:

0805H84

Lab ID:

0805H84-02A

Collection Date: 5/28/2008 5:00:00 PM

Matrix:

STORMWATER

Result	Units	Qual	MDL	PQL	Date Analyzed
		E200.8			Analyst: DBB
ND	mg/L		NA.	0.0100	6/2/2008 10:57:11 AM
ND	mg/L		NA	0.0050	6/2/2008 10:57:11 AM
	•	E245.1			Analyst: DL
ND	mg/L		NA	0.0010	5/30/2008 1;40;00 PM
		SM3500-CR	)		Analyst: CHW
ND	mg/L	н	NA	0.010	5/29/2008 4:52:00 PM
		SM5210 B			Analyst: BS
ND	mg/L		NA	2	6/3/2008 1:04:00 PM
		E410.4			Analyst: DSA
56	mg/L		NA	10	5/30/2008 12:40:00 PM
		SM4110B		•	Analyst: SB
0.57	mg/L		NA	0.10	6/2/2008 10:10:00 PM
		SM4500-P BE			Analyst: SB
0.34	mg/L		NA	0.05	6/3/2008 9:15:00 AM
		SM4500-NORG	С		Analyst: JL
2.0	mg/L		NA	1.0	6/3/2008 7:30:00 AM
		SM2540 D			Analyst: GV
12	mg/L		NA	1	5/30/2008 8:00:00 AM
	ND ND ND ND 56 0.57 0.34	ND mg/L  ND mg/L  ND mg/L  ND mg/L  56 mg/L  0.57 mg/L  0.34 mg/L	E200.8  ND mg/L  ND mg/L  E245.1  ND mg/L  SM3500-CR E  ND mg/L  H  SM5210 B  ND mg/L  E410.4  56 mg/L  SM4110B  0.57 mg/L  SM4500-P BE  0.34 mg/L  SM4500-NORG  2.0 mg/L  SM2540 D	E200.8  ND mg/L ND mg/L ND mg/L ND mg/L ND mg/L SM3500-CR D ND mg/L H NA SM5210 B ND mg/L NA SM4110B 0.57 mg/L NA SM4500-P BE 0.34 mg/L NA SM4500-NORGC NA SM2540 D	E200.8  ND mg/L ND mg/L ND mg/L  E245.1  ND mg/L  SM3500-CR D ND mg/L  SM5210 B  ND mg/L  E410.4  SM4110B  0.57 mg/L  SM4500-P BE  0.34 mg/L  SM4500-NORGC  2.0 mg/L  SM2540 D

Key:	MCL	Maximum Contaminant Level
-	MDL	Minimum Detection Limit

NA Not Applicable

ND Not Detected at the PQL or MDL

PQL Practical Quantitation Limit

TIC Tentatively Identified Compound, Estimated Concentration

Analyte detected in the associated Method Blank

Estimated Value above quantitation range

Holding times for preparation or analysis exceeded

Spike/Surrogate Recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level

# Attachment Q

**Sewage Sludge** 

- Sludge Data
- Sludge Received from Offsite

Western I ia Water Authority Water Poudtion Control Plant Attachment A.8 Sludge Data

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Notes: 1. Detection levels vary based on solids concentrations.

2. NA indicates not analyzed

3. Detection limit indicated as "less than" (<) values for those parameters not detected during analysis.

# Sludge Received from Off Site

	Dry Metric Tons Generated
Generator	per Year
Blacksburg Country Club WWTP	110.2
Camp Virginia Jaycee, Inc.	2.0
Catawba Hospital	393
Oak Hill Academy WWTP	94.55
Red Oak Manor WWTP	11.35
Roanoke Cement	37.82
Town of Buchanan	1.57
Whites Truck Stop	1.5
Woodhaven Nursing Home	3.65
Total Sludge Generated Off Site	656

Annual Sludge Generation Rate	
(Roanoke WPCF) (dry metric tons)	5,673

Total Sludge Received and	
Generated (dry metric tons)	6,329

# Attachment R)

**Public Notice/ Public Notice Comments** 

#### PUBLIC NOTICE - Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Roanoke City.

PUBLIC COMMENT PERIOD: 30 days following the public notice issue date; comment period ends 4:30 pm of last day PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS, AND PERMIT NUMBER: Western Virginia Water Authority, 1502 Brownlee Avenue, S.E., Roanoke, VA 24014, VA0025020

FACILITY NAME AND LOCATION: Western Virginia Water Authority Water Pollution Control Plant, 1502 Brownlee Avenue, S.E., Roanoke, VA 24014

PROJECT DESCRIPTION: The Western Virginia Water Authority has applied for a reissuance of a permit for the public wastewater treatment plant in Roanoke City. The applicant proposes to release treated sewage wastewater at a rate of 55 million gallons per day from the current facility into a water body with a proposed upgrade to 62 million gallons per day. Storm water will also be released. Sludge from the treatment process will be periodically land applied at agronomic rates to fields located in Franklin and Bedford Counties. Land application shall be in accordance with biosolids permit numbers BUR 79 and BUR 114. Sludge application sites in Franklin County are owned or operated by Mike Altice, William Truman, Gary Dudley, Bill English, Noel Parcell, William Helms, Byron Brooks, Edgar Morris, Brenda Tyree, Van Flora, John Bowman, Glenn Clingenpeel, Ronald Walker, and James Campbell. Sludge application site in Bedford County are owned or operated by W.D. Watson, Winston Robertson, Jackie Preston, and Mark Wagner. The proposed reissuance contains requirements that sewage sludge comply with Cumulative Pollutant Loading Rates for metals, Class B pathogen requirements; and vector reduction requirements. The facility proposes to release the treated sewage and storm water into the Roanoke River in Roanoke City in the Roanoke River Watershed (VAW-LO4R). A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: bacteria, nutrients, organic matter, solids, toxic pollutant (ammonia), dissolved oxygen

HOW TO COMMENT: DEQ accepts comments by e-mail, fax, or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for a public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if a public response is significant and there are substantial, disputed issues relevant to the permit CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS, AND ADDITIONAL INFORMATION:

NAME: Becky L. France; ADDRESS: Virginia Department of Environmental Quality, Blue Ridge Regional Office, 3019 Peters Creek Road, Roanoke, VA 24019-2738; PHONE: (540) 562-6700; E-MAIL ADDRESS: blfrance@deq.virginia.gov; FAX: (540) 562-6725. The public may review the draft permit and application at the DEQ office named above by appointment.

## France, Becky

From:

Scott.Shirley@WesternVaWater.org

Sent:

Wednesday, February 18, 2009 3:34 PM

To:

France, Becky

Subject:

RE: Alternate Lagoon Language

Becky,

Based upon the revision to part I.D.14, we are in agreement that this version of the permit is satisfactory. Thanks for all of your work and efforts. Take care.

S. Scott Shirley Director of Wastewater Operations Western Virginia Water Authority Telephone: (540) 853-1283

"France, Becky"
<blf><blfrance@deq.vir
ginia.gov>

02/18/2009 01:57 PM To

<Scott.Shirley@WesternVaWater.org>

CC

Subject

RE: Alternate Lagoon Language

I have revised Part I.D.14 of the permit.

I agreed with the change in the plan submittal date. I have added a couple of sentences to your proposed language. I added a statement about the plan including criteria for defining inadequacy of the lagoons because I wanted to be sure that the plan defined it. I also added standard language about any new liner for a corrective action plan. Please review the attached revision and let me know it is OK. I will also revise the Fact Sheet references to this special condition.

----Original Message----

From: Scott.Shirley@WesternVaWater.org [mailto:Scott.Shirley@WesternVaWater.org] Sent: Wednesday, February 18, 2009 9:50 AM

To: France, Becky Cc: Lawrence Hoffman

Subject: Alternate Lagoon Language

Becky,

This email is to follow up with alternate lagoon language which we believe is more appropriate and reflects more of the original intent of this discussion. As I referenced in the earlier e:mail, our files do include documents which demonstrate the permeability of lagoons 5 and 1 as being 7x10 to the -7. We will continue to research our files to determine whether additional information is available, but the window of this discussion

has been fairly tight. Thanks.

(See attached file: alternate lagoon language.doc)

S. Scott Shirley Director of Wastewater Operations Western Virginia Water Authority Telephone: (540) 853-1283

[attachment "Permit Part I WVWA WWTP 2009 021809 3.doc" deleted by Scott Shirley/WesternVaWater]

# France, Becky

From:

France, Becky

Sent:

Wednesday, February 18, 2009 1:57 PM 'Scott.Shirley@WesternVaWater.org'

Subject:

RE: Alternate Lagoon Language

Attachments:

Permit Part I WVWA WWTP 2009 021809 3.doc



<sup>2</sup>ermit Part I WVWA WWTP 2009 0...

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From: Scott.Shirley@WesternVaWater.org [mailto:Scott.Shirley@WesternVaWater.org]

Sent: Wednesday, February 18, 2009 9:50 AM

To: France, Becky Cc: Lawrence Hoffman

Subject: Alternate Lagoon Language

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(See attached file: alternate lagoon language.doc)

S. Scott Shirley
Director of Wastewater Operations
Western Virginia Water Authority
Telephone: (540) 853-1283

## France, Becky

From:

France Becky

Sent:

Wednesday, February 18, 2009 9:56 AM

To:

Foster,Kip

Subject:

FW: Alternate Lagoon Language

Attachments:

alternate lagoon language.doc



alternate lagoon language.doc ...

----Original Message----

From: Scott.Shirley@WesternVaWater.org [mailto:Scott.Shirley@WesternVaWater.org]

Sent: Wednesday, February 18, 2009 9:50 AM

To: France, Becky Cc: Lawrence Hoffman

Subject: Alternate Lagoon Language

#### Becky,

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(See attached file: alternate lagoon language.doc)

S. Scott Shirley Director of Wastewater Operations Western Virginia Water Authority Telephone: (540) 853-1283

# ORIGINAL VPDES DRAFT PERMIT LANGUAGE

# 14. Watertight Integrity Study and Ground Water Monitoring Plan

- 1. By May 10, 2009, the permittee shall submit to DEQ, Blue Ridge Regional Office for approval:
  - (1) A protocol for monitoring ground water quality impacts due to lagoon leakage from each of the five sludge storage lagoons, or
  - (2) A plan for assessing the watertight integrity of the lining of the five sludge storage lagoons.
- 2. If the watertight integrity study is chosen, the following requirements shall apply:
- (1) Within 400 days of approval of the protocol, the permitee shall submit a report of the results to the DEQ Regional Office.
- (2) Should the integrity study indicate a lagoon liner permeability in excess of 10<sup>-6</sup> cm/sec, the permittee, upon written notification by the Regional Director, shall within 60 days of such notification submit for approval a plan and schedule for corrective action. If the corrective action plan specifies installation of a liner, the liner must exhibit a coefficient of permeability of no more than 10<sup>-6</sup> cm/sec.
- 3. If the ground water monitoring program option is selected, then the following requirements shall apply:
  - (1) Within 60 days of approval of the protocol, the permittee utilizing the approved protocol, shall submit valid ground water monitoring data. Thereafter, the permittee shall submit ground water monitoring data in accordance with the protocol schedule.
  - (2) Should these ground water monitoring data indicate contamination to ground water, the permittee, upon written notification by the Regional Director, shall within 60 days of such notification submit for approval a plan and schedule for corrective action. If the corrective action plan specifies installation of a liner, the liner must exhibit a coefficient of permeability of no more than 10<sup>-6</sup> cm/sec.

### POSSIBLEIDRAFIT ALHERNATIVE LANGUAGE

# 14. Lagoon Structural Integrity Study

- 1. By July 1, 2009, the permittee shall submit to DEQ, Blue Ridge Regional Office for approval a protocol for evaluating the structural integrity of the five sludge storage lagoons. This plan shall describe the methods proposed to evaluate the potential for a lagoon failure that could result in the release of sludge.
- 2. Within 180 days of approval of the protocol, the permittee shall submit to the DEQ a report containing the results of the structural integrity evaluation.
- 3. Should the results of the evaluation indicate a reasonable potential for a lagoon failure, the report shall include a corrective action plan and a corresponding schedule to address the identified deficiencies in lagoon structural integrity.

# 15. Watertight Integrity Study and Ground Water Risk Assessment

- 1. By August 1, 2009, the permittee shall submit to DEQ, Blue Ridge Regional Office for approval a protocol for assessing the watertight integrity of the lining of the five sludge storage lagoons.
- 2. Within 400 days of approval of the protocol, the permittee shall submit a report of the results to the DEQ Regional Office.
- 3. Should the integrity study indicate a lagoon liner permeability in excess of 10<sup>-6</sup> cm/sec, the permittee, upon written notification by the Regional Director, shall within 60 days of such notification submit for approval a plan and schedule for conducting a ground water risk assessment. This plan shall address the methodology for identifying potential receptors, exposure pathways, exposure levels, and the associated potential risks to receptors. As an alternative, the permittee may submit a protocol for monitoring ground water quality impacts due to lagoon leakage from the sludge storage lagoon location.

- 4. If the ground water risk assessment option is chosen, the permittee shall submit a report of the results to the DEQ Regional Office within 180 days of approval of the protocol.
- 5. If the ground water monitoring program option is selected, then the following requirements shall apply:
  - (1) Within 90 days of approval of the protocol, the permittee utilizing the approved protocol, shall submit valid ground water monitoring data.

    Thereafter, the permittee shall submit ground water monitoring data in accordance with the protocol schedule.
  - (2) Should these ground water monitoring data indicate contamination to ground water, the permittee, upon written notification by the Regional Director, shall within 60 days of such notification submit for approval either a plan and schedule for corrective action or a plan and schedule for performing a ground water risk assessment.
  - (3) If the corrective action plan option is selected and specifies installation of a liner, the liner must exhibit a coefficient of permeability of no more than 10<sup>-6</sup> cm/sec.
  - (4) If the ground water risk assessment option is selected and indicates a risk to the identified receptors, the permittee shall within 60 days of notification by the Regional Director submit for approval a plan and schedule for corrective action.

## France, Becky

From:

Scott:Shirley@WesternVaWater.org

Sent:

Wednesday, February 18, 2009 8:39 AM

To:

France,Becky

Subject:

Re: WVWA WPCP Permit

Becky,

The language regarding the lagoons still need a fair amount of work. I did find construction files from 1981/1982 for an expansion of lagoon 1 and the construction of lagoon 5. These files include permeability test results for the clay liner. The clay liner permeability was 7 x 10 to the -7, meeting the State requirements. The file also included the approval in the CTC from the State.

We have the original drawings for the remaining lagoons and are actively working to identify additional construction documents. The original construction drawings on the lagoon show a much thicker liner than I would have anticipated.

I will submit some alternate language for consideration by DEQ today. Thanks.

S. Scott Shirley Director of Wastewater Operations Western Virginia Water Authority Telephone: (540) 853-1283

> "France, Becky" <blfrance@deq.vir ginia.gov>

02/18/2009 08:22

To <Scott.Shirley@WesternVaWater.org>

CC

Subject

WVWA WPCP Permit

The public notice comment period for the WVWA WPCP permit ended on February 17, 2009 and comments were received from VAMWA. I am completing a response letter regarding these comments. I have not received any comments from EPA concerning the draft permit.

Is there anything in the permit we need to discuss further?



### COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Blue Ridge Regional Office

www.deq.virginia.gov

David K. Paylor Director

Steven A. Dietrich Regional Director

Roanoke Office

3019 Peters Creek Road Roanoke, Virginia 24019 (540) 562-6700 Fax (540) 562-6725

Lynchburg Office 7705 Timberlake Road Lynchburg, Virginia 24502 (434) 582-5120

L. Preston Bryant, Jr.

Secretary of Natural Resources

(434) 582-5120 Fax (434) 582-5125

February 19, 2009

Mr. Frank W. Harksen, Jr. Virginia Association of Municipal Wastewater Agencies, Inc. PO Box 51 Richmond, VA 23218-0051

RE:

Response to Comments on VPDES Permit Application, WVWA WPCP (VA0025020)

Received February 17, 2009

Dear Mr. Harksen, Jr.:

Thank you for your comments on the draft permit for the WVWA WPCP. Your letter provides several comments as to why the Virginia Association of Municipal Wastewater Agencies (VAMWA) believes the Tier designation for the receiving stream at the WVWA WPCP discharge should be Tier I rather than Tier II. You noted that the BOD/dissolved oxygen allocation given for the 62 MGD facility was designated as fully allocated. The Tier designation of the stream is based upon the existing water quality of the stream from the time the facility was upgraded to 35 MGD. The allocations for the 55 MGD and 62 MGD facilities are designed to prevent any significant lowering of the existing water quality. The allocations in the Water Quality Management Plan are based upon this level of protection.

As noted in your letter, this segment of the Roanoke River is listed on the 303(d) list for PCB and benthic impairments. In accordance with Agency guidance, PCBs found in fish tissue are not used to determine tier designations because they are generally associated with human health impacts rather than a known impact to aquatic life in the water. Total suspended solids is given as the cause of the benthic impairment for the stream segment. The Total Maximum Daily Load allocation increased the facility's allocation for this parameter which was included in a modification during the previous permit term.

Your letter notes the importance of caution in water quality standards evaluations. For Tier designation the state of Virginia has opted to provide a conservative default assumption of Tier II for receiving streams. In the absence of data to indicate otherwise, the receiving stream for the outfall 001 discharge at the WVWA WPCP has been designated as Tier II. If we receive data in the future that does not support these assumptions, we will reevaluate the Tier designation for this facility.

Mr. Frank Harksen VAMWA February 19, 2009 Page 2 of 2

If you need any additional information about this permit, please feel free to call me at (540) 562-6700.

Sincerely,

Becky L. France

Environmental Engineer Senior

cc: Michelle Ashworth, Aqualaw PLC

From:

Ashworth, Michelle [mashworth@aqualaw.com]

Sent:

Tuesday, February 17, 2009 3:19 PM

To:

Dietrich, Steven; France, Becky

Subject:

. Comments on Antidegradation Tier Selection - VPDES Permit No. VA0025020

Attachments: VAMWA Comment - Antideg - VA0025020.pdf

On behalf of VAMWA please accept the following comment on the Western VA Water Authority VPDES permit. Thank you.

Michelle Ashworth Paralegal AquaLaw PLC 804-716-9021 ext. 7 www.AquaLaw.com

This e-mail may contain confidential or privileged information. If you are not the intended recipient, please advise by return e-mail and delete immediately without reading or forwarding to others. Thank you.



#### VIRGINIA ASSOCIATION OF MUNICIPAL WASTEWATER AGENCIES, INC.

P.O. Box 51

Richmond, Virginia 23218-0051 Tel (804) 716-9021 • Fax (804) 716-9022

MEMBER AGENCIES Alexandria Sanitation Authority County of Arlington Augusta County Service Authority Blacksburg-VPI Sanitation Authority County of Chesterfield County of Fairlax ion Roads Sanitation District County of Hanover onburg-Rockingham Reg. Sewer Auth County of Henrico Henry County Public Service Authority City of Hopewell Loudoun Water City of Lynchbu City of Martinsville Pepper's Ferry Regional Wastewater Auth. Prince William County Service Authority City of Richmond Rivnna Water and Sewer Authority South Central Wastewater Authority County of Spotsylvania County of Stafford

ASSOCIATE MEMBER AGENCIES Amherst County Service Authority Town of Amherst Bedford County Public Service Authority City of Bedford Town of Blackstone Town of Bowling Green City of Buena Vista County of Campbell
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Upper Occoquan Sewage Authority Western Virginia Water Authority City of Winchester

AFFILIATE MEMBER AGENCY District of Columbia Water & Sewer Auth.

CONSULTANT MEMBERS Black & Veatch CDM CH2M Hill Dewberry Greeley and Hansen Hazen and Sawyer Malcolin Pirate Olbrien & Gree

City of Waynesboro Town of Woodstock

ASSOCIATE CONSULTANT MEMBERS
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HDR Engineering
Oliver Incorporated
Parsons
R. Stuart Royer & Associates
Steams & Wheier
Timmons Group
URS Corporation
Whitman, Reguardt & Associates
Wiley & Wilson
WW Associates

LEGAL COUNSEL Christopher D. Pomerny, Esq. President, AquaLaw PLC February 17, 2008

By Email and U.S. Mail

Mr. Steve Dietrich Regional Director West Central Regional Office Department of Environmental Quality 3019 Peters Creek Road Roanoke, Virginia 24019

Ms, Becky L. France Environmental Engineer Senior West Central Regional Office Department of Environmental Quality 3019 Peters Creek Road Roanoke, Virginia 24019

Re: VPDES Permit No. VA0025020 Comments on Antidegradation Tier Selection

Dear Mr. Dietrich and Ms. France:

On behalf of the Virginia Association of Municipal Wastewater Agencies we wanted to provide the attached brief comments on one particular issue in the reissuance of the VPDES permit for the Western Virginia Water Authority wastewater facility. As you may know, VAMWA is an environmental organization representing 57 Virginia POTW owners/operators, which cover the large majority of the sewered population of Virginia.

The issue that we address is the Department's selection of an Antidegradation tier. This is an important issue to VAMWA's membership, and we ask that you fully consider the comments and select an Antidegradation tier in a manner consistent with current guidance and practice.

As always, we appreciate the Department's efforts in addressing water quality.

Sincerely,

Frank W. Harksen, Jr.

President

Cc: Mike McEvoy S. Scott Shirley VAMWA Members

#### VIRGINIA ASSOCIATION OF MUNICIPAL WASTEWATER AGENCIES

VPDES Permit No. VA0025020 Comments on Selection of Antidegradation Tier

February 17, 2008

VAMWA appreciates the opportunity to submit the following comments on the selection of an Antidegradation tier for VAMWA member Western Virginia Water Authority's permit reissuance. The Fact Sheet identifies the receiving waters as Tier 2, when it appears that Tier 1 is correct under current auidance and procedures.

First, the Fact Sheet on page 13 indicates that, at the 62 mgd design flow, the receiving waters are fully allocated for BOD/dissolved oxygen under the Water Quality Management Plan. This is a standard basis for designating waters as Tier 1.

Second, it appears that the receiving waters are 303(d) listed for both PCBs and benthic impairment. These listings should result in Tier 1 designations. The Department's long-established and long-applied permitting guidance, GM00-2011, provides that Tier 1 designations include those waters where "[d]ata collected from the segment of stream being considered . . . demonstrate that one or more standards are violated or are just barely being met . . . ."

We understand that the data for PCBs and the benthic evaluations indicate impairments. These data are, of course, the basis for the 303(d) listings and for the TMDL processes addressing those listings. Therefore, the listings should result in a Tier 1 designation. We recognize that Department memoranda from 2005 discussed a possible exception where a Tier 1 determination would not be made based solely on fish consumption advisories. However, where a consumption advisory has resulted in a 303(d) listing, that advice would not apply in any event. We also note that, to our knowledge, the comments about consumption advisories and the other 2005 comments have not been incorporated into permitting guidance. We also note that no reasoned basis was stated for the consumption advisory and other exceptions that might have had the effect of Tier 2 designations in some waters that would historically be considered Tier 1.

Finally, the Fact Sheet addresses mercury and concludes that the existing data may not reliably show standards exceedances. We have not fully considered the data to which the Fact Sheet refers. We do not necessarily disagree with the Department's evaluation of the mercury data clean sampling and total mercury/methyl mercury issues the Fact Sheet raises. However, we would expect the Department and the Regional Office to use similar degrees of caution in other water quality standards evaluations where imperfect data may tend to adversely impact permittees.

As you know, the Department committed to the State Water Control Board at its October, 2008 quarterly meeting that a Stakeholders Group will be convened to address Tier designations, and to address whether the Commonwealth should change to a pollutant-by-pollutnt approach. Particularly in light of the work of the expected Stakeholders Group, the Department should not in individual permit cases attempt to vary from the long-established designation guidance. In a case like this, where there are relevant 303(d) listings in the receiving waters, it appears clear that the accepted Tier designation approach results in a Tier 1 designation. We urge the Department to review this issue again, and to correctly designate these waters in the Fact Sheet as Tier 1.

From:

France, Becky

Sent:

Thursday, February 12, 2009 2:17 PM

To:

'Martin.Sensabaugh@WesternVaWater.org'; 'Lawrence Hoffman'

Subject:

FW: Special Condition 14- VPDES Permit VA0025020

Attachments: Permit Part I WVWA WWTP 2009 021209.doc; Fact Sheet WVWA WPCP 2009 021209.doc

From: France, Becky

**Sent:** Thursday, February 12, 2009 2:16 PM **To:** 'Scott,Shirley@WesternVaWater.org'

Subject: RE: Special Condition 14- VPDES Permit VA0025020

I have reviewed your special condition language and spoken with ground water monitoring staff regarding lagoon integrity assessments. In your example, the water balance and the documentation options are tied to the 10<sup>-6</sup> cm/s standard. The language given in the special condition you provided describes methodology for determining that the permeability of the lagoon liner is acceptable. I have some concerns as to whether a water balance would work given the open lagoons and decanting. But, I would like to leave the study protocol open for further evaluation. I have modified the special condition to allow more flexibility of options. I have used some of the standard language so that the permittee can do ground water monitoring as an option. I have taken out the requirement for ground water monitoring if an integrity study is done and the permeability is not acceptable. In this case a corrective action plan would be required. I have also changed the due date for the integrity study to within a certain timeframe from the approval of the plan rather than a specific date to allow time to make any needed changes in the study plan before proceeding. I have also revised the special condition rationale in the Fact Sheet.

You indicated that you wanted a more general reopener clause. By not specifying the type of study plan, I feel there is a little more flexibility than the language in your e-mail. The Authority would be required to submit a plan for approval by DEQ and that can be discussed prior to the submission date. I have changed the due date for the integrity study so that the timeframe starts with approval of the plan. Of course WVWA has the option of completing the study plan and the study/monitoring sooner and I would encourage that approach.

I checked on the source of the special condition language regarding plumes and found that it was taken from the standard language in DEQ Guidance Memorandum 98-2010 (Attachment V-1). This language is more typically added when contamination may be a problem. Since an assessment has not occurred, I have deleted it.

I hope the changes to the Part I.D.14 special condition provide enough flexibility to assess the lagoons and ensure that the ground water and surface water are protected. Please review the attached Fact Sheet and permit changes and let me know if there is anything that needs more work.

----Original Message----

From: Scott.Shirley@WesternVaWater.org [mailto:Scott.Shirley@WesternVaWater.org]

Sent: Wednesday, February 11, 2009 1:51 PM

To: France, Becky

Cc: Martin.Sensabaugh@WesternVaWater.org; Lawrence Hoffman

Subject: Special Condition 14- VPDES Permit VA0025020

Becky,

I hope that you are doing well. After further review and discussion regarding the addition of special condition 14 to our permit, this item has proved o be extremely problematic. Part of the challenge is that the language as drafted does not fit with the permit guidance language for which this condition is being applied. Also, the language regarding plumes, etc. appears to be from either the UST or another program and likely is not applicable to wastewater lagoon structures.

The following is the specific section of the permit guidance language we have identified:

(Use the following special condition to demonstrate the integrity of a lagoon liner; suspect leaking lagoon)

1. Within 60 days after the [effective/modification] date of this permit, the permittee shall submit to

the DEQ [Regional Office] for approval:

a. a protocol for establishing a valid water balance for the earthen

lagoon, or

b. a protocol for monitoring ground water quality impacts due to lagoon

leakage, or

c. documentation that the lagoon's permeability is not greater than 10-6

cm/sec.

- 2. If the water balance option is selected, then the following requirements shall apply:
- a. Within 60 days after the approval of the protocol, the permittee,

utilizing the approved protocol, shall submit a valid monthly water balance for this facility.

Thereafter, the permittee shall submit a valid water balance monthly for 12 consecutive months, due by the tenth of each month for the previous month's performance.

b. Should any monthly water balance indicate lagoon liner permeability

in excess of 10-6 cm/sec, the permittee, upon written notification by the Regional

Director, shall within 60 days of such notification submit for approval a plan and schedule for corrective action. If the corrective action plan specifies installation of a liner, the liner must exhibit a coefficient of permeability of no more than 10-6 cm/sec.

- 3. If the ground water monitoring program option is selected, then the following requirements shall apply:
- a. Within 60 days of approval of the protocol, the permittee, utilizing

the approved protocol, shall submit valid ground water monitoring data. Thereafter, the

permittee shall submit ground water monitoring data in accordance with the protocol schedule.

b. Should this ground water monitoring data indicate contamination to

ground water, the permittee, upon written notification by the Regional Director, shall

within 60 days of such notification submit for approval a plan and schedule for corrective action. If the corrective action plan specifies installation of a liner, the liner must exhibit a coefficient of permeability of no more than 10-6 cm/sec.

We believe that this is a complicated issue which warranted a much greater notice period and the late introduction of this is very problematic in terms of being able to complete an appropriate review and offer meaningful comments. Specifically, we would be open to a discussion about a more general re-opener clause which would allow both WCRO and the Authority to work through the appropriate language for inclusion into the permit. Use of typical re-opener language would be acceptable. The current language is not acceptable.

As previously discussed, the Authority is voluntarily moving forward with plans to complete a geotechnical study to confirm the structural integrity and strength of the berms which will be shared with WCRO voluntarily. We look forward to working with you to quickly resolve this matter.

S. Scott Shirley
Director of Wastewater Operations
Western Virginia Water Authority
Telephone: (540) 853-1283

From:

Scott.Shirlev@WesternVaWater.org

Sent:

Wednesday, February 11, 2009 1:51 PM

To:

France, Becky

Cc: Subject: Martin.Sensabaugh@WesternVaWater.org; Lawrence Hoffman

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Thereafter, the permittee shall submit a valid water balance monthly for 12 consecutive months, due by the tenth of each month for the previous month's performance.

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S. Scott Shirley Director of Wastewater Operations Western Virginia Water Authority Telephone: (540) 853-1283

From:

France, Becky

Sent:

Monday, February 02, 2009 4:20 PM

To:

'Lawrence Hoffman'
RF: WVWA TKN/NH3

Subject:

Attachments: ammonia TKN comparison 2008 final revised 012109.xls; WVWA WPCP AMMONIA STATS OUTPUTS.pdf;

MSTRANTI (draft k) WVWA WPCP 55 MGD acute metals.xls; MSTRANTI (draft k) WVWA WPCP 62 MGD

acute metals.xls

I was also a little surprised that the 62 MGD calculation for the weekly average TKN needed to slightly lower for January, February, and March (from 5.0 mg/L to 4.9 mg/L). It is correct that the lower the frequency for the proposed limit calculation the less stringent the limits tend to be. The existing monthly average TKN limits during that same period noted above for the 62 MGD facility were OK and did not need to be modified. I think I may have not seen it earlier when I prepared the first draft because the monthly average was OK.

I have attached a copy of the spreadsheet comparison and STATS outputs. The AWLA spreadsheets have not changed from the first draft. If there is something overlooked or you need more information, please let me know.

From: Lawrence Hoffman [mailto:lhoffman@olver.com]

Sent: Monday, February 02, 2009 1:05 PM

To: France, Becky

Cc: Scott.Shirley@WesternVaWater.org

Subject: RE: WVWA TKN/NH3

Hi Becky,

Thanks for forwarding the TKN tier information. Based on your comments below, I believe I understand how you determined the new TKN tier limits but I was a little surprised / confused on the need to reduce the 62 MGD TKN weekly average numbers. I realize it is a minor reduction, but was hoping you could send me the fact sheet and associated calculations information for that limit (it helps me to review the methodology/calculations). Based on the earlier drafts, I did not think the existing TKN limits would be changed. Thanks,

Lawrence

From: France, Becky [mailto:blfrance@deq.virginia.gov]

Sent: Wednesday, January 28, 2009 4:44 PM

To: Lawrence Hoffman; Scott.Shirley@WesternVaWater.org

Subject: RE: WVWA TKN/NH3

I have attached the changes to outfall 001. The TKN limits have three tiers and there is a four year compliance schedule for the more stringent TKN limitations. The TKN loadings have been adjusted to reflect the changes in the concentration values. The TKN limitations were made more stringent during the October through December months for the 55 MGD and 62 MGD facilities. Also, the weekly average limitations for the TKN limitations for the 62 MGD were made slightly more stringent during the January through March time frame (concentration limit changed from 5.0 mg/L to 4.9 mg/L adjusted accordingly). Let me know if there is anything about these limits that have missed especially given the number of changes made.

Previously I attempted to find a more specific screening tool to relate TKN and ammonia concentrations for this facility. General WEF influent ratios may not be reflective of the effluent TKN to ammonia ratios expected. I examined data from a wastewater

treatment facility which had secondary treatment and did see a consistent relationship between ammonia and TKN. However, the ratio of ammonia to TKN was usually lower than 60% ammonia to TKN. So, I concluded that using a 60% influent ratio of ammonia to TKN was not clearly a good estimate of effluent ammonia concentration. Three ammonia and TKN data points were available with the application but since most of the data were below quantification levels a ratio could not be established. For a ratio to be determined both values must be quantified. Also, three data points were not sufficient to account for any variability. Since I was not able to determine a ratio, I decided to again use the screening values given in Guidance Memorandum 00-2011 to define the TKN limits needed for the permit. Note that the screening values (TKN-3.0 mg/L) are not actual TKN concentrations. I feel that these screening values are not overly conservative and represent a need for more stringent limits during the months defined above. I apologize for not discussing this information with you earlier. When I reevaluated the frequency ammonia limit and maximum ammonia concentration, I began to question assumptions for TKN and I failed to work it all out before talking with you again.

I will be sending you a revised draft permit and we can go over the comments and make sure everything has been addressed.

I have received some comments from our compliance staff. I recently received a copy of their lagoon inspection report. The compliance staff expressed concerns about the integrity of the sludge lagoons and has recommended a watertight integrity study. It was also recommended that in the event that an alternative disinfection method is used, <u>E. coli</u> testing be increased to 1/day. Given the fact that the receiving stream has a TMDL and daily disinfection compliance tracking is desired, I believe this is an appropriate inclusion in the permit.

From: Lawrence Hoffman [mailto:lhoffman@olver.com]

Sent: Wednesday, January 28, 2009 8:39 AM

To: France, Becky

Cc: 'Scott.Shirley@WesternVaWater.org'

Subject: WVWA TKN/NH3

Good Morning Becky,

I hope you are doing well. I wanted to follow-up on our recent conversation and my follow-up e-mail regarding the three seasonal TKN tier option as an alternative to the proposed ammonia limit for the WVWA draft permit and see if you had a chance to look at that further and perhaps prepare new draft limits pages wit ht eh new tier for review by the Authority. I realize that you wanted to get this resolved quickly so we can proceed to the public comment period. If we can assist in any manner or if you need additional information or if we need to discuss this further, please let me know. Thanks,

#### Lawrence

R. Lawrence Hoffman Director of Environmental Services Olver Incorporated 1116 South Main Street Blacksburg, VA 24060 Phone (540) 552-5548 Fax (540) 552-5577

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From: France, Becky

Sent: Thursday, January 22, 2009 7:59 AM

To: 'SMITH, RON'

Subject: RE: VPDES Permit VA0025020

The public notice should have included only Franklin and Bedford County for land application. The application does not indicate that land application will take place in Botetourt County. I have revised the public notice and sent the changes to the newspaper for the January 23 publication date. I am not sure the change has been made in time to appear in the paper corrected, but I sent it to them yesterday afternoon.

From: SMITH, RON [mailto:rsmith@BOTETOURTVA.US]

Sent: Wednesday, January 21, 2009 5:30 PM

To: France, Becky

Subject: VPDES Permit VA0025020

Ms. France:

Botetourt County has received the notice for the reissuance of the VPDES permit for the Western Virginia Water Authority Plant. The public notice states that sludge will be applied in Franklin and Botetourt Counties, but Franklin and Bedford County farms are listed as application sites. Are there no application locations in Botetourt County? Please advise.

#### Thanks

Ron Smith Public Works Manager Botetourt County

From:

SMITH, RON [rsmith@BOTETOURTVA.US]

Sent:

Wednesday, January 21, 2009 5:30 PM

To:

France, Becky

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Thanks

Ron Smith Public Works Manager Botetourt County

From: Lawrence Hoffman [Ihoffman@olver.com]

Sent: Tuesday, January 20, 2009 4:06 PM

To: France, Becky

Cc: 'Scott.Shirley@WesternVaWater.org'
Subject: Alternative Ammonia Evaluation Option

Hi Becky,

As a follow-up to our phone conversation, I am providing an alternative ammonia limit evaluation approach based on effluent data from this facility rather than using "assumed" data or relationships.

There are limited ammonia and TKN data available since the upgrade was completed and this will be a better indication of effluent ammonia than the raw influent percentage. We collected 3 effluent samples for ammonia as part of the application preparation. I understand from the fact sheet that all TKN data since the upgrade is less than QL (<1 mg/L). If we assume conservatively that the <QL data for ammonia is 0.1 mg/L instead of <0.1 for those events and assume that the TKN is 1 mg/L instead of <1 mg/L, the corresponding ammonia percentage of TKN is 17%:

#### Permit App Data

Date	NH3	TKN	% NH3
4/30/2008	0.31	1*	31%
5/22/2008	0.1*	1*	10%
6/24/2008	0.1*	1*	10%
*Adjusted to QL (actual data is			·
<ql)< td=""><td></td><td>Average</td><td>. 17%</td></ql)<>		Average	. 17%

The actual effluent ratio of 17% could be used instead of assumed 60% based on an influent ratio to determine if the existing TKN limits "control" for ammonia. The consistency in the effluent TKN indicates that the treatment process is consistent (particularly for nitrogen) and the available data could be used to characterize the effluent.

Please let us know if you have any questions or concerns using this approach. Thanks,

#### Lawrence

R. Lawrence Hoffman
Director of Environmental Services
Olver Incorporated
1116 South Main Street
Blacksburg, VA 24060
Phone (540) 552-5548
Fax (540) 552-5577

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From:

France, Becky

Sent:

Tuesday, January 20, 2009 3:26 PM 'Scott.Shirley@WesternVaWater.org' RE: Additional Permit Comments

Subject:

I am sorry to take so long to answer your comments. I have been out of the office since Friday (state holiday).

I am in the process of recalculating the ammonia limits. For the purposes of comparing the TKN to ammonia limits, I am reverting back to the Agency Guidance regarding assuming 3.0 mg/L of TKN is refractory nitrogen. I found a WEF reference document indicating as much as 60% of a "typical" municipal influent may be ammonia. But, I have not found consistent data to provide a more precise relationship between TKN and ammonia, so I am deferring to our Agency guidance. Given the low TKN limits, the 3.0 mg/L assumption is not being used as an actual ammonia value but rather a method of comparing the ammonia and TKN limits to determine if the TKN limit may be considered reasonably stringent without an ammonia limit.

I apologize for not working through all of my new assumptions prior to discussing what I thought would be the changes. After talking with you concerning the new frequency and addition of an ammonia limit for two additional months I found the 60% reference above and I recalculated the need for an ammonia limit for 10 months.

Please be reassured that we can address these concerns during the public notice period. I need to work through the STATS program calculations again with the 3/week frequency so that I can give you the correct limits. I anticipate the limits will be effective during only a few months of the year. I will have the changes to you soon. The wording of the public notice remains correct so there are no problems there.

----Original Message----

From: Scott.Shirley@WesternVaWater.org [mailto:Scott.Shirley@WesternVaWater.org]

Sent: Friday, January 16, 2009 9:46 AM

To: France, Becky

Cc: Lawrence Hoffman; Martin.Sensabaugh@WesternVaWater.org

Subject: RE: Additional Permit Comments

Becky,

After the initial review of the revised permit, we have a significant problem with the revised ammonia. In our telephone conversation, I had understood that the revisions would include an extension of the permit limit by a couple of months and we anticipated seeing a 5 month period in combination with the lowered monitoring frequency. The revised permit reflects an extension of the limit to a 10 month monitoring period.

As I mentioned in the e:mail yesterday, we received late input from VAMWA regarding Ammonia. Based upon conversations with various other utilities, we have been told that DEQ has typically dropped ammonia limits when a TKN limit of 4.5 mg/l weekly, 3.0 mg/l monthly is included on the assumption that these TKN levels equate to basically zero ammonia. I still think this is the first item we should address.

In the event that the previous Agency approach is not utilized, the suggested reduction in monitoring frequency combined with an extension of the limit to 10 months is not acceptable. The original monitoring period and frequency would be preferable to this approach. Thanks.

S. Scott Shirley Director of Wastewater Operations Western Virginia Water Aut ≠rity Telephone: (540) 853-1283

"France, Becky" <br/>
<br/>
<br/>
dlfrance@deq.vir ginia.gov>

01/16/2009 07:01 AM <Scott.Shirley@WesternVaWater.org>

"Lawrence Hoffman" < lhoffman@olver.com>

Subject

RE: Additional Permit Comments

I have revised the Fact Sheet, Permit, Attachment C, Attachment M, and Attachment N. I have posted a complete copy of the permit, Fact Sheet, and attachments on the FTP drive. The documents are found at the following site:

ftp://ftp.deg.virginia.gov/wps

The pdf files are in the Permits/WCRO/VA0024020/011509 Revisions\

I will follow-up with a second e-mail of response to your comments. I just wanted to make sure you received the changes I made to the draft today. If you have any further comments let me know and we can also respond to any additional comments you have during the public notice period.

----Original Message----

From: Scott.Shirley@WesternVaWater.org [mailto:Scott.Shirley@WesternVaWater.org] Sent: Thursday, January 15, 2009 7:36 AM

To: France, Becky

Subject: Additional Permit Comments

#### Becky,

My apologies for a later notification, but the tight time frames always make it challenging to find everything in the draft permits and turn it back around to you quickly. I think that the following comments are fairly minor and simply involve areas where it appears that some of our existing language and items are different than DEQ guidance and language used in other permits, so hopefully they fall into the category of editorial changes. The comments are as follows:

The CBOD limit and QL should be in whole numbers. The limit should be stated as 5 and 8 mg/l. The DEQ guidance on significant digits acknowledges that BOD/CBOD analyses report values without decimals.

Under the sewage sludge limitations and monitoring, the fact sheet states that the biosolids are classified as being regulated under the cumulative loading rates. It is my understanding that the language being used in other permits contains monthly average concentration limits along with the maximum (ceiling) concentration limits. The cumulative loading only applies if you exceed the ceiling limits and therefore must track the amount of biosolids land applied on a particular field forever. I understand that

other facilities report mo .hly averages instead of trackin cumulative totals which will require a DMR report for each field.

I think that while our language may be somewhat confusing, the way the program has functioned in the past (based on input from WCRO) has been consistent with the rest of the State. Apparently the language is somewhat different in other permits to reflect this approach though.

Special Conditions Part I.D.10 requires that Attachment A be used for reporting the data. We would request that this requirement be deleted. Attachment A is not a good vehicle for reporting as it does not allow for reporting the sample date, analysis date, etc.

Footnote 2 of Attachment A lists a "special composite". This requirement has been discussed by VAMWA and DEQ with the result that it will no longer be included in permits. Fred Cunningham of DEQ was on this team and can help explain the agreement.

Thanks again for all of your help.

S. Scott Shirley
Director of Wastewater Operations
Western Virginia Water Authority
Telephone: (540) 853-1283

Attachment S

**EPA Checksheet** 

## State "FY2003 Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

#### Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	WVWA WPCP				
NPDES Permit Number:	VA0025020				
Permit Writer Name:	Becky L. France		•		
Date:	10/28/08		···		
Major [X ]	Minor [ ]	Industrial [ ]	Muni	cipal [	<b>X</b> ]
I.A. Draft Permit Package St	ubmittal Includes:		Yes	No	N/A
Permit Application?			Х		
Complete Draft Permit (for including boilerplate inform		e permit – entire permit,	х		
3. Copy of Public Notice?		\	X		-
4. Complete Fact Sheet?			X		
5. A Priority Pollutant Screen	ing to determine pa	rameters of concern?	X		
6. A Reasonable Potential ar	nalysis showing calc	culated WQBELs?	X		
7. Dissolved Oxygen calculat	ions?		X		
8. Whole Effluent Toxicity Te	st summary and an	alysis?/	X		
9. Permit Rating Sheet for ne	w or modified indus	strial facilities?			X
	-				
I.B. Permit/Facility Characte	ristics	1 10 100 200	Yes	No	N/A
1. Is this a new, or currently ւ	inpermitted facility?			X	
Are all permissible outfalls process water and storm wathorized in the permit?	(including combine rater) from the facili	d sewer overflow points, non- ty properly identified and	x		
Does the fact sheet <b>or</b> per treatment process?	mit contain a descri	ption of the wastewater	X		* 110

I.B. Permit/Facility Characteristics – cont. (FY2003)	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit? under consent order	X		
5. Has there been any change in streamflow characteristics since the last permit was developed?	X	-	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	x		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
<ul> <li>c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water? E. coli</li> </ul>	х		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		,
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production? design capacity upgrade	X		
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?	X		! !
17. Is there a <u>potential</u> impact to endangered/threatened species or their habitat by the facility's discharge(s)?	X		
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?			Х
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X	İ	

### Part II. NPDES Draft Permit Checklist (FY2003)

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record <u>only</u> for POTWs)

[].,	A. Permit Cover Page/Administration	Yes	No	N/A
1.	Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.	B. Effluent Limits – General Elements	Yes	No	N/A
1.	Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2.	Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C	C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1.	Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2.	Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
	a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3.	Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4.	Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
5.	Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
	a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL? E. coli	X		

][.	D. Water Quality-Based Effluent Limits – cont. (FY2003)	Yes	No	N/A
3.	Does the fact sheet provide effluent characteristics for each outfall?	X		
4.	Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
	a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
	b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		_
	c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
	d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		,	X
	e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X	;	į
6.	For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7.	Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8.	Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
Does the permit include appropriate biosolids use/disposal requirements?	х		
2. Does the permit include appropriate storm water program requirements?			X

11.1	F. Special Conditions – cont. (FY2003)	Yes	No	N/A
3.	If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?	X		
4.	Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5.	Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?			X
6.	Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?			X
	a. Does the permit require implementation of the "Nine Minimum Controls"?			X
	b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
	c. Does the permit require monitoring and reporting for CSO events?			. <b>X</b>
7.	Does the permit include appropriate Pretreatment Program requirements?	Х		-

II.G. Standard Conditions	Yes	No	N/A
Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

#### List of Standard Conditions - 40 CFR 122.41

Duty to comply
Duty to reapply
Need to halt or reduce activity
not a defense
Duty to mitigate
Proper O & M
Permit actions

Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset

Reporting Requirements
Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24-Hour reporting
Other non-compliance

2. Does the permit contain the additional standard condition (or the State		
equivalent or more stringent conditions) for POTWs regarding notification of	$\mathbf{X}$	
new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		

#### Part II. NPDES Draft Permit Checklist (FY2003)

# Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for <u>all</u> non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
Does the fact sheet <b>or</b> permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?		-	
Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?			

II.B. Effluent Limits – General Elements	Yes	No	N/A
<ol> <li>Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?</li> </ol>			
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			

11.0	C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1.	Is the facility subject to a national effluent limitations guideline (ELG)?			
	a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			
	b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			
2.	For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?			
3.	Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?			
4.	For all limits that are based on production or flow, does the record indicate that the calculations are based on a "reasonable measure of ACTUAL production" for the facility (not design)?			
5.	Does the permit contain "tiered" limits that reflect projected increases in production or flow?			
	a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			
6.	Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?			

П.С	C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ) – cont.	Yes	No	N/A
7.	Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?			
8.	Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?			

[].]	D. Water Quality-Based Effluent Limits	Yes	No	N/A
1.	Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?			
2.	Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			
3.	Does the fact sheet provide effluent characteristics for each outfall?			
4.	Does the fact sheet document that a "reasonable potential" evaluation was performed?	THE COLUMN TWO IS NOT THE COLUMN TWO IS NOT		
	a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?			
	b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			
	c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?			
	d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			
	e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?		į	
5.	Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?			
6.	For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?			
7.	Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?			
8.	Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?		•	

FY2003

II.E. Monitoring and Repor	ting Requirements (FY2003)		Yes	No	N/A
1. Does the permit require a	t least annual monitoring for all limited	parameters?			1.5
	et indicate that the facility applied for ar aiver, AND, does the permit specifically				
Does the permit identify t performed for each outfal	ne physical location where monitoring is l?	s to be			A G C S Spainted Spainted
Does the permit require to the State's standard prace	esting for Whole Effluent Toxicity in acc tices?	ordance with			
II.F. Special Conditions			Yes	No	N/A
•	evelopment and implementation of a BomP) plan or site-specific BMPs?	est			
a. If yes, does the permit the BMPs?	adequately incorporate and require con	npliance with			
	npliance schedule(s), are they consister eadlines and requirements?	nt with			
	ns (e.g., ambient sampling, mixing stud nsistent with CWA and NPDES regulat				
II.G. Standard Conditions	•		Yes	No	N/A
Does the <b>permit</b> contain equivalent (or more string	all 40 CFR 122.41 standard conditions ent) conditions?	or the State			
List of Standard Conditions	40 CFR 122.41				
Duty to comply Duty to reapply Need to halt or reduce activity not a defense Duty to mitigate Proper O & M Permit actions  Property rights Duty to provide information Inspections and entry Monitoring and records Signatory requirement Bypass Upset  Reporting R Planned Inspections and entry Anticipat Signatory requirement Monitoria Complia 24-Hour Other no			change ed nonc s ng report nce sche reporting	omplia ts edules g	nce
equivalent or more stringe	ne additional standard condition (or the ent conditions) for existing non-municipation levels [40 CFR 122.42(a)]?				

#### Part III. Signature Page (FY2003)

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name Becky L. France

Title Environmental Engineer Senior

Signature Buky L Suarco

Date 10/28/08